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The Romance of the Rails

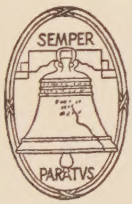
Books by Agnes C. Laut

The Conquest of Our Western Empire
The Blazed Trail of the Old Frontier
Enchanted Trails of Glacier Park
Through Our Unknown Southwest

The Romance of the Rails

By
Agnes C. Laut

VOLUME I
ILLUSTRATED



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1929

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The Romance of the Rails

Printed in the United States of America

Note

For many of the illustrations of this book acknowledgment is made to our railway systems. Modern examples of the " iron horse " could not have been adequately pictured without their friendly coöperation. Though not every one of them has been represented specifically, the material lent by all has been of great service as a guide during the difficult process of selection. If, therefore, certain of the more recent standard types of locomotive are conspicuous by their absence, it is to the fact that they are in daily use that their omission is due. In such a history as " The Romance of the Rails " it has seemed advisable to devote as much space as possible to the lesser known models and scenes of bygone days. In this connection, the Simmons-Boardman Publishing Company has generously allowed the inclusion of an early time-table and plates showing the development of the passenger car. Special thanks are extended to Mr. C. L. Winey for his invaluable assistance. His courtesy has made accessible not only a large number of rare old prints, cartoons, maps and documents, familiar to him as an expert, but several unique items from his own personal collection.

Foreword

IN trying to tell the story following the four centuries of exploration in North America of that "pillar of cloud by day and pillar of fire by night," which led man in all his wilderness wanderings to a realization as far exceeding his dreams as an astronomer's telescope outreaches the feeble grasp of a baby's hand at the stars, I have been struck by the beauty and the pathos, the ugliness and the bathos, and yet the infinite pity and as infinite glory of it all. Black with sins and blunders, radiant with faith and hope, understanding neither the scope nor destination of the *Thither* to which he was bound nor the *Yon* from which he had come, it is all so pathetically great, so magnificently triumphant that we are forced to ask — What is it for? To go out like a flickering candle quenched in the dark? Hardly! Not that way does or has Nature worked. Here was Man, the weakest, the most helpless, the most naked of all the creatures created in Nature's scale, setting out to climb from slime to stars. Like a child, he fell. He fell often and he fell hard; but like a child, up he rose and went on again — often a little lower than the angels and often a great deal lower than the beasts; and in the brief period of the last century he has achieved more than ever before in six thousand years. He achieved it in spite of the Worst in himself, but always aspiring to to the Best.

We ascribe much of all accomplished in the last

hundred years to our institutions; but every institution is only the enlarged shadow of some Man, or rather the Spirit in the weak physical mechanism called Man.

Of no factor in progress is this truer than of the Steel Rail. From wheel to electric dynamo, each is the device of the Spirit in some Man; and as the story proceeds, if I seem to hitch each mile forward to some individual man's record, it is because each mile gained in the onward march was gained as the result of some man's dream, vision, effort with all its blunders and falls, pauses and crimes, and conquests of the impossible. If I seem to hit some of the sins hard as the story goes on, it is not because of the sin stopping progress. It couldn't. Perhaps we all have to bark our shins on sins and blunders to learn to keep on the racial trail and not revert to wolf; and after all, the sin went under the wheel of progress as it always must. It was not because I wanted to hit the sin that I struck it. It was because the sin seemed to be a sin against cosmic racial advancement, like the poor fools on one line who greased the rails to prove an engine couldn't climb.

In not one case that I know has the crime of legalized theft or concealed burglary benefited the criminal even past his own generation. The wolf that has hamstrung some beautiful horse is presently himself hamstrung and devoured by his fellows, or dropped from the pack to die diseased — an outcast. In one of the great Indian reserves on the Columbia for some few years the herds of horses, cattle and sheep

were raided and hamstrung by a cougar — Rocky Mountain panther — which became a terror to every camp. One night a terrible noise came from the hog pens and chicken coops of the little central town. When men dashed in with clubs and guns they found snarling, backed up in a corner, a huge tawny form lashing and foaming, but powerless to spring; and when they clubbed him to death and brought him out to the light, it was found that he was stone blind and had been starving to death. His stuffed pelt now stands in a hotel corridor to grace a deep moral to an untold life story.

I have always thought the buccaneer era of rails resembled that poor old stone-blind savage beast.

To pretend, or claim, that all the conflicting dates on this or that, all the disputed figures, all the opposing policies in violent collision, are given here with meticulous accuracy would be absurd.

There are no two authorities who agree on many points: and these are minor points; for progress marched swiftly on just the same, leaving the broken heads to watch the tail-light as the pillar of fire advanced through the night.

I have not attempted to tell the story in terms of financial structures. That is only a part of it. Much less have I tried to tell the story of the rail as a sort of glorified schoolboy blaze of a great adventure. That, too, is only part of it. To me the rail is the epic of speed, of space conquered, leading on to another racial epoch, in which we are the actors. The next curtain-rise, the next era — who knows? Will it

witness the binding of all nations in a world unity, as it witnessed the binding of almost fifty little states in one great State?

There it is — a pillar of cloud by day, a pillar of fire by night with its headlight illuminating the way before and its tail-light semaphoring the way open for all behind; and in that way, and that way only, have I tried to tell the story.

A. C. L.

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All of these pioneer inventors died poor. Oliver Evans invented the amphibious steam wagon for water and land; John Stevens proved rails would hold a train on a circular track; George Stephenson built the first successful passenger train; and Robert Fulton was the father of the steamboat. 34

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Jay Gould, along with other members of the notorious Tweed Ring, was frequently a victim of the famous cartoonist, Nash. 283

"AND *the Lord went before them by day in a pillar of a cloud, to lead them the way; and by night in a pillar of fire to give them the light; to go by day and night.*" *Exodus 13:21.*

"NEXT *to the Christian religion and the common schools, no other single work enters into the welfare and happiness of the people . . . to the same extent as the railway . . .*" From an address by JAMES J. HILL, a few years before he died.

PART I

Hitching the Kettle to Steam Power

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The Romance of the Rails

Chapter I
"Polly Put The Kettle On." 1786–1804

THE hour, two in the morning. Fogs lie thick as gray wool over the forests dank with mist damp. Torchlights of pine faggots, candles stuck in iron holders, lamps ablink in smoky lanterns, begin to glimmer through the white dark round the little taverns with signs of Flying Squirrel, Red Fox, Good Friend, when there bays through the deep woods in the heavy bass of a hound on scent the ram's-horn reveille of "Polly-Put-the-Kettle-On! Polly-Put-the-Kettle-On and We'll All Take Tea!"

Instantly, lights twinkle in all the windows of the little inns; but not glass windows — no, parchment. Doors flying open and shut reveal travelers tumbling from hall and wall berth-beds and attics, dressing as they hurry to lug down baggage in carpetbags and grab as they can huge tankards of hot tea or mulled wines, to be gulped in "post haste," to wash down breakfasts of venison and mush and pancakes served with maple syrup.

No serviettes for polite gentry here. The stage-coach will leave in less than an hour. First come first served; and the impolite gentry used their sleeves and the polite their sheet-sized pocket handkerchiefs.

Outside is a great jingling of bells. Horses with manes decorated with bells and red tassels, tails trussed up in braids and bobs with more tassels, are stamping and snorting out of stables steaming with sweat. Drivers are swearing at one another in quite unexpurgated pioneer dialect, for these rival knights of the whip have just four minutes to harness and hitch, and the " boss " is there timing them, with a watch the size of a small saucer in hand. Those drivers who got away first had best chance not to plunge in mud holes made by passing teams. Passengers first in coaches had best chance for choice place, close up to the driver, out of door draughts. The coaches could carry eighteen people, crammed. They were comfortably packed with nine to twelve. They were easy riding with eight or nine. Baggage strictly limited to fourteen pounds per person was stowed in " the 'possum's belly " — the boot below the slatted floor — or tossed on the roof. In spite of rain, the roof was the safer spot for baggage. Oilcloth could protect overhead. If bogged in a mud hole of slush, or stalled in fording a thaw-swollen stream, the pouch underfoot was apt to take water, and travelers had to fish out bags and hold them high overhead till the waters were passed, though waves might come up in the coach knee-high.

" Polly-Put-the-Kettle-On — Polly-Put-the-Kettle-On — Polly-Put-the-Kettle-On " — the post boys, with chests inflated like frogs, keep booming — booming — booming through the ram's horns. One can see gentlemen in satin breeches and high top-boots and

long cape-coats tumbling with more haste than grace to the back steps of the stagecoaches, followed by ladies in hoops and bustles and veils and wraps aplenty, with hot bricks to warm feet, stowing themselves in stage carriages crowded to twice their capacity. If too crowded, the gentlemen could ride on horseback, which young gallants preferred; but horseback on narrow roads, dripping rain and night mist, often girth deep in mud, was more picturesque than pleasant.

The stage roads followed old Indian trails. Indian trails followed old game trails. Old game trails took no heed of rivers, puddles, twists, turns, overhead brambles that knocked riders' beaver hats to the discard.

Nevertheless, those were " the good old days." The weaklings had to grow courageous and strong, or die; and one combination stage-and-keel-boat line in the Middle West regularly advertised that ladies and gentlemen need have no apprehension of chance shots from raiding Indians, because awnings and shutters of iron were proof against bullets and that pistols would be supplied for self-defense when passengers so requested.

Where the swamps were the worst, corduroy roads bumped the springless wagons over the water line. Where the logs of the corduroy rotted and broke below the heavy Belgian horses, planks surfaced the danger spots; so that President Washington counted himself fortunate to average twenty miles a day, whether he traveled by stagecoach, or horseback.

Still it is not surprising the wise Father of his Country foresaw from the beginning that the overcoming of vast distances was one of the first needs of the young republic, to bind it together.

Fares in the settled sections were not so far different from what they are to-day, three to four and five cents a mile; but in the sparsely settled country they ran to ten cents a mile for a through passenger and twelve and one-half cents for a local. On boats going upstream, the cost was three times that of going downstream. It was seventy-five dollars from the Ohio to New Orleans. It was one hundred twenty-five dollars from New Orleans to the Ohio. Over short distances, the differences were as one to three. In rush periods when stage and river rates combined, it cost as much as three hundred dollars to go from St. Louis to a point in Southern Montana. Then the difficulty was not to get loads going West. There were no " empties " westbound. In one rush year in the sixties, from a point in Kansas to Virginia City, the Montana stage and river combined cost a passenger six hundred dollars for his ticket one way, — time, seventeen days, — baggage limit twenty-five pounds, meals one to two dollars.

Regarding baggage charges and postal rates, the less said the better. Over fourteen pounds the baggage rate ran at six to eight cents a mile. For thirty miles, postage rate for one sheet was six cents, for over four hundred miles twenty-five cents. On double sheets, the rate was doubled, on three sheets tripled. No wonder our grandfathers and grand-

The steamboat as a precursor of the rail was a factor of the greatest importance in providing an efficient means of transportation for a vast and loosely knit young republic. The Indians variously named the steamboat a "Millwalkee," a "Fire Canoe" and a "Walk-on-the-Water."

mothers wrote their love letters on tissue and India paper, first across the paper and then up and down over the first writing.

As to speed, the fastest from New York to the site of modern Buffalo was one hundred hours, with four nights' sleep en route. To travel from Philadelphia to Baltimore in five days was almost perilous; and from Philadelphia to Quebec in seven days was good time — summer on wheels, winter on sleighs. Eight hours and thirty-five minutes was a record from New York to Philadelphia.

With highways so outrageous that neither coach nor sleigh could flounder through, baggage was flung across pack horses tied head to tail in single file. Then, led by a bell mare, the caravan set out, with riders shepherded by a guide till coach travel could again be resumed.

Three o'clock in the morning — with a last blast to wake the dead, the coaches were off at a gallop. Heads joggled. Bodies couldn't. They were packed. Plug hats bounced. Ladies' veils went askew. Drivers cracked their long whips and swore by this and that they would beat So-and-so of a rival stage if they had to spill every passenger in a puddle — which they not infrequently did. Gentlemen swore. Ladies heaved sighs or fell asleep where they sat. The roads ran round sharp corners — what matter? The horses galloped. There were fresh relays every twelve miles — four minutes for the change and the stretch of passengers' cramped limbs. Stumps stuck up in mid-road and if the driver did not swerve his galloping

team — sometimes two teams tandem — the baggage pouch ripped. Fords, there were many; bridges, few; and ferries across the dangerous deep streams aplenty, but tolls high — fifty cents for team, twelve and one-half cents for riders. Stops to change teams were usually at turnpike gates, where tolls were similar to ferries; for ferries and turnpikes were licensed. In rush seasons there was always a great jockeying of the rival coaches to get on the ferry or through the turnpike first; and sometimes drivers got down from their seats and settled disputes with fists. The same fights occurred where rival teams met at narrow spots on the highway. Where night stops compelled taverns, little towns grew up in the woods, with stage men and farm markets and flour mills and stores, just as later the centering of rail traffic created, overnight, cities of a size beyond the grasp of our ancestors' dreams; and each little town had its deeply intrenched "vested interests": horse dealers, tavern keepers, stores, farmers — who had good sale for horses and produce and could always get work in off seasons teaming for the coach lines — turnpike, ferry, and bridge companies.

These old stagecoaches used to cost from three to four hundred dollars, and the horses from sixty-five to a hundred fifty each, which, of course, would have been much more in our currency; and the rough usage was terrific for horses and coaches. Horses had to have much more bone than in England, because American roads were yet roads only by courtesy; coaches had to be lighter, for the heavier type ac-

cumulated too much mud in a soil that was sticky in thaws, and lighter coaches knocked to pieces in a season.

Anyone who suggested better modes of travel could count on being violently opposed by at least sixty per cent of the rural and small urban population. Land values averaged fifty cents to two dollars and fifty cents an acre in the East and one dollar and twenty-five cents in the West. In fact, when one rich farmer brought his herds up to what is now Chicago, and having sold them was going back with the money bags slung across his pack saddle, he was offered in trade for his fine pony the whole site of what is now the Palmer House Block. The offer struck him as a joke. A horse in what is now Wyoming was considered an indifferent trade for a good Thanksgiving turkey; so that a turkey was valued at more than the Palmer House Block. In fact, the whole site of what is to-day the city of Toronto — two hundred thousand acres — was bought from Indians who used it as a portage point, for twenty shillings cash.

What produced the amazing transformation of a continent in a hundred years? What accomplished in America what Asia had not achieved in six thousand years, nor Europe in eighteen hundred years?

Simply steam!

AUTHOR'S NOTE

The descriptions of travel from 1789 to 1828 have been drawn from many journeys of this era — too many to enumerate. They are literally legion, from *Washington Papers* on the East to such early Western travels as Bradbury, Breckenridge, and Nuttall. Students who want to verify figures will find them carefully compiled in two or three compendiums

which cannot be accused of bias. The best of these are: the *History of Transportation* edited by *Meyer* and issued by the Carnegie Institute of Washington, 1917; *Ringwalt's Compendium,* 1888; and William Washington's impartial study of the railroads. Literally hundreds of such authorities could be given, but these are most reliable. They are not, in fact, histories at all. They are the State and Federal records quoted from the time when records were first kept. To these should be added the *I. C. C.* documents and yearly prints. Of these, the voluminous prints and carbon copies of hearings are much more revealing than the necessarily condensed annual reports.

Chapter II

When *Did* "Polly-Put-The-Kettle-On"? 1804–1831

THE story of the conquest of space began centuries before the ram's horn blew its morning signal in the backwoods of America.

It began even before an old Greek scientist of Alexandria, in 200 B.C., discovered that a spouted sphere filled with water would whirl, by some sort of repercussion, as long as fire below the sphere (the first fire-box furnace) kept the water (in the first boiler) spouting steam. Only old Hero didn't think of hitching that spout to a tube and of attaching a movable piston rod inside that tube to be hoisted and let down, and he didn't think of fastening that piston rod to a grasshopper shaft, and of connecting that grasshopper shaft to the hub of a wheel which would be whirled round like the sphere and would drag other wheels behind.

Poor Friar Roger Bacon, sitting imprisoned in his cell at Oxford for uttering such heresy, had predicted: *"Carriages without horses will travel with incredible speed."* Old Hero hadn't worked it out so far ahead. He had the idea all right; but he didn't harness the idea to practical usage. In Ohio in 1828, when a school board was asked for permission to hold a discussion in the schoolhouse as to the use of this new steam power on railroads, it gave a reluctant permission in these historic words: *"You are welcome to use the schoolroom to debate all proper questions; but such things as railroads . . . are impossibilities and rank*

infidelity. There is nothing in the Word of God about them. If God had designed that His intelligent creatures should travel at the frightful speed of 15 miles an hour by steam, He would have foretold it through His holy prophets. It is a device of Satan to lead immortal souls down to Hell." And even Boston warned ominously that the jars of such unholy speed would lead to "concussion of the brain" and undoubtedly end in a race of "speed maniacs." All of which recalls George Stephenson's stolid reply when asked what would happen if in front of his new rail-steam contraption a cow posted herself on the track — "it would be uncommonly awkward for the coo."

The first engines were called "puffing billies," "Hell on wheels," "snorting race horses," "Tom Thumbs," "rockets that were going to go up and come down in sections" like Darius Green, "puffing John Bulls," "devil wagons," "iron horses," "black dragons snorting sparks in the darkness and silence of night disturbing the quiet of rural sleepers and bringing undesirable strangers in our midst." I was on one of the first railroads that crossed the interior of Newfoundland. Farmers almost mobbed the train. It would — they said — kill the stray pigs and run over cows. Newfoundland fishermen had had experience in a banking crash. They found checks were no good on a bankrupt bank; so when train men first tried to check baggage of burlap sacks filled with all an out-harbor man's possessions, the fishermen and their families would have none of those checks. They lugged all their ill-smelling fishy bundles right into

the first-class coaches and defied the powers to eject them. New York State annals tell of an early era — of mobs who tore up tracks and, if the track men had interfered, would have torn the rail hands limb from limb; and the rotten eggs hurled in one section were as sweet-smelling incense compared to " the opprobrious epithets " hurled in local elections.

Mistakes were made — pretty nearly every mistake that could be made by blundering humans feeling forward in the dark. On one Southeastern engine, a negro sat on a steam valve to keep it down and ascended much faster than he anticipated. On another line in the Southeast, a cow on the track did make it " uncommonly awkward " for the directors aboard; for it spilled every mother's son of them head over heels down an embankment with more damage to high hats and dignity than to bones. On another track where a horse-hauled car raced an engine-drawn car, the horse beat the engine. Less than a century ago, rail highways were voted a " public nuisance " in a city of New York State, and a Grand Jury ordered them removed from city limits.

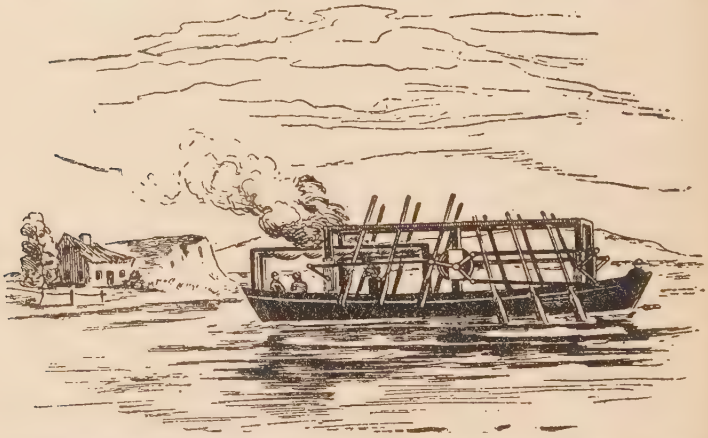
In America, Oliver Evans — a wagon worker's apprentice in 1772 — seems to have been one of the first to grasp the meaning of steam power. He wrote " Open Letters to Congress " and carried his ideas to the greatest engineers of the period, to be told with contempt he had " steam mania " on the brain. He proved, in 1804, that a steam-propelled scow could be worked by wheels on land and by a paddle wheel to rear and only such device could increase the value

of Western lands. "Pah," said the wise wigs, "only the increased population can bear the heavy cost of constructing roads." "Nay," retorted poor Oliver, daft with one idea as poor inventors always are, "such carriage of people and produce will increase population." The big fellows touched their heads and smiled pity. Evans tried to form a company to build a railroad from Philadelphia to New York. Of course, he couldn't raise the money. It was madness. Who had ever done it? "*Nevertheless,*" retorted Evans, "*the time will come when carriages propelled by steam will be in general use traveling at the rate of fifteen miles an hour, or 300 miles a day, as fast as birds can fly. Two sets of railways will be laid . . . and passengers will sleep in these stages.*" Prophetic, wasn't it? Yet he was regarded as "steam mad."

As early as 1796, John Fitch, a peddler of medicinal roots from the Ohio, had a steam yawl ship that would work, and he demonstrated the fact on the Delaware; but when Congress was asked to help him, the peddler was allowed to cool his heels and his ardor in waiting. He went back to Kentucky and drank himself to death. If Evans and Fitch had dared to predict sixty miles an hour, they would probably have been sent to an asylum. "Till we have lines of brass, preposterous to talk of traveling fifty or sixty miles an hour." That was the verdict of the greatest engineer in Europe.

Up in Quincy, Massachusetts, in 1826, a train road like a modern coal mine dump was in use to convey

blocks of stone from a quarry for the Bunker Hill monument. The horses pulled it uphill, and the weight of gravity drew it down; and the horses rode downhill with the load. It was just the simple gravity road one sees in coal mines and lumber camps to-day with improved devices — double tracks, chains and cables on pulleys, the loaded dump wagon scooting



John Fitch, one of America's pioneers in steam navigation, built a steamboat which conveyed passengers for hire on the Delaware in the summer of 1790.

downhill of its own weight carrying the empties. A similar road was in use in Pennsylvania in 1827, and about the same period out from Carbondale, for the Lackawanna coal fields.

Yet no one seemed to foresee that, if a rail dump car could work by gravity, then with steam as the pull or the push a railway, whether of iron or wood, ought to work on the level.

The Delaware and Hudson Canal Company had

sent their engineer, Mr. Allen, to England to get locomotives, which were being tested, and found successful. A Pennsylvania Society in 1825 had also sent an engineer, Mr. Strickland, to gather facts in Europe; and the reports of these two engineers did a great deal to blow the dead weight of prejudice off heads in America. Why did such prejudice need to be blown off? Chiefly, the pocket nerve. The new Republic was desperately poor. It couldn't afford to make mistakes; so like all nervous leaders of progress, it at once began to make as many mistakes as possible. Keen old New York, ever with an eye to advantage — which had had a charter for a railroad in December, 1825 — had to contract with the printer in the advertisement for the charter that if the charter "succeeds, bill for advertising one dollar and fifty-six cents; if it does not succeed — nothing"; and Stephen Van Rensselaer, one of its richest backers at Albany, distinguished himself by "backing out" because the city of Albany would be "ruined" if a railway diverted travel and traffic to Manhattan.

In 1705, Newcomen, a blacksmith of Dartmouth, England, devised a contraption to pump water from flooded mines by steam. It was just the old trick — plug a kettle spout and the lid lifts. Newcomen had a beam like a balance. The steam forced one leg of the beam up. The other leg of the beam went down. When the steam got relief, the first beam dipped down, the other beam tipped up and hoisted the water. The water was poured out — then up bubbled the

steam end of the beam again; and the motion lasted long as the fire box below the kettle (boiler) kept the water spouting steam. That was all. It sounds simple, but the invention fell flat until James Watt, a Glasgow mathematical maker of instruments, caught another idea. He was asked to repair one of Newcomen's machines nearly fifty years after Newcomen's death in 1720. He saw that a piston rod forced up and down by steam might be hitched to a grasshopper leg, and that leg hitched to the hub of a wheel might run little mills, trucks, yes, — perhaps factories. Came Dick Trevithick to work out steam under high pressure. (Terrifying — his critics said — it would blow up. That is what he wanted it to do — blow up; but blow up under control valves and things.) When he added to that a wheel with flanged edges to hold it on iron rails — the modern railroad was pretty nearly a thing perfected — pretty nearly, but not quite. The designer had to prove his plan would work. Better try it on water first where there wouldn't be curves, and up grades, and down grades, and road beds, and slippery rails which the wheels would certainly jump, and cows to get on the track and — and — a dozen imaginary lions in the way, which John Bunyan had long ago proved are only the shadowy demons of our own fears.

The very year poor Evans in America had built his scow with wheels for land and paddle wheel to rear for water and a boiler amidships to pump the wheels with a grasshopper leg, Trevithick did build a rail engine for land. That was in 1804 — the year Lewis

OLIVER EVANS.

Oliver Evans, a wagon worker's apprentice in 1772, was one of the first American inventors to grasp the meaning of steam power. He predicted that carriages propelled by steam would travel at the rate of fifteen miles an hour.

and Clark began a three-year traverse across an area which steam now crosses in five days, and gasoline in an aeroplane in two to three.

It was George Stephenson who took steam out of

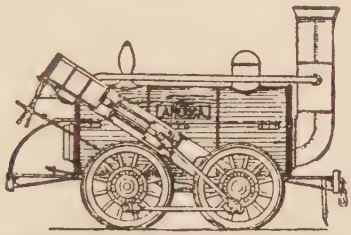
the realm of bootless, fruitless discussion, and put it — as we would say — on the screen of life.

Stephenson came on the scene ten years later than Trevithick, the Cornish miner. He was born in 1781. He inherited all that had been pioneered before him. He was most fortunately not a wise wig. He was a practical fireman, brakeman, engineer in Newcastle mines before he was twenty-one. The deeper mines go, the higher the cost. With coal, increased costs may limit sales to what buyers can afford; and if you pay low wages to lower costs to buyers, your workman may be reduced to wages too low to live. Stephenson was a coal miner; but he was also a mechanic. He knew exactly how that jig saw worked havoc at both ends. So he worked out an engine for a coal tramway, in 1814, that drew eight wagons big as itself at four miles an hour each trip.

Other inventions doubled the speed of his engine. He got speed up so he could hope for thirty miles an hour. Stephenson now became engineer for the Stockton and Darlington line, and his company authorized him to try out his inventions; but so doubtful were they of his success that they put in the contract of 1821 by haul "with men or horses or *otherwise*." That "*otherwise*" gave Stephenson his chance. He worked away until September 27, 1825, "the most famous day in rail history," when he invited the public to come and see. What it saw was an engine driven by Stephenson, helped by his brother James. A tender came next with water and coal. Six trucks next, loaded

with coal and a few courageous passengers on top of the coal. One truck had flour barrels with timorous passengers ready to jump. A group of sceptical engineers came on the next wagon. Directors in great dignity but with hearts in their mouths next. Then six wagons with fools so rash they didn't know the risk. Then fourteen wagons with a promiscuous lot of miners ready to jump.

The train weighed the colossal total of nearly ninety tons — as much as forty teams. It attained



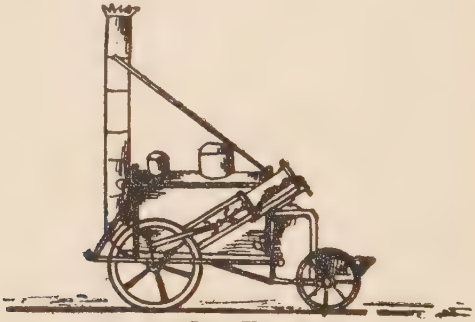
MODEL OF FIRST ENGLISH LOCOMOTIVE IMPORTED IN 1829.

The perfection of the horizontal boiler was of paramount importance in the development of the locomotive. This crude English model shows one of the early attempts to solve the problem.

eight miles an hour. England went "steam mad," though a horseman rode ahead at frantic speed on the track "to shoo" all people and animals out of the way. A frantic yelling rider was the first railway signal. If you look at the picture of the first train, it is almost like a boy's plaything. You can see the grasshopper shaft, the chain connecting fore and hind wheels, the rude couplings, the smokestack like a small chimney; the little dump cars; but it isn't quite as crude as one of the first trains in America where

the couplings let the dump wagon behind telescope the car ahead so often that the train had to be stopped, a rail fence split, and the quarter lengths tied to the couplings to keep each hind car from bumping its neighbor off the track.

So Stephenson's first " Locomotion " was followed by a greatly improved " Rocket " that ran twenty-nine and a half miles an hour. No need to convince the sceptical now. People threw their hats in the air.



***Rocket* Type.**

This early American engine was built on the same lines as Stephenson's famous *Rocket* that ran twenty-nine and a half miles an hour.

Country folk came great distances and camped in the fields to see the train pass, and when the train had passed they often found themselves and all their former ideas and prejudices spilled helter-skelter on the ground; for the horses took fright and the drivers were so intent on the passing spectacle they awakened to find themselves coming down with the impact of a spank and the horses on a wild stampede towards the horizon.

All these reports the American engineers, Allen

and Strickland, now brought back to the United States.

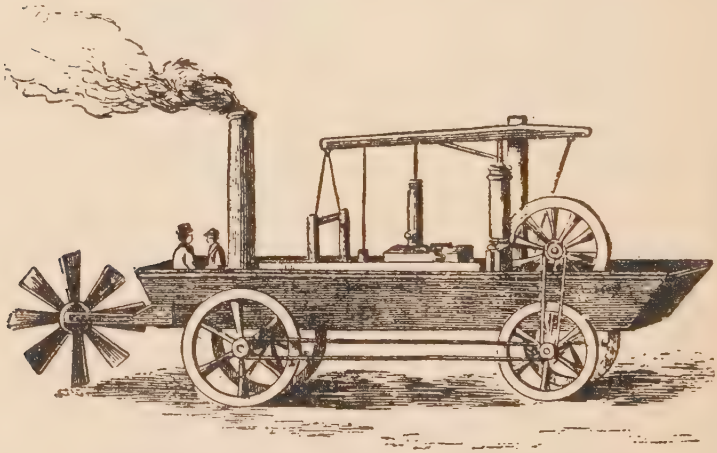
The ram's horns of the old post roads with all their glamour of adventure passed for a new glamour that was to span the world.

Now take a glance back to the general conditions of the New Republic when it began its great century of rail construction. If it does not, it ought to increase your respect for the dauntless spirits that essayed what seemed to be the impossible. The original colonies had emerged triumphant from the Revolutionary War and the War of 1812. They were sky-high in hope and confidence, but desperately short on cash. The population numbered less than half the people of what were known as the Netherlands. From being a doubtful experiment in democracy, they had become a power to be reckoned with by every nation in Europe. From beginning a narrow strip along the Atlantic, the New Republic now reached from the Gulf of Mexico to the Canadian Border, and from the Atlantic Seaboard to Oregon yet held in " joint occupation " but with, as all diplomats knew, sound title to the Straits of San Juan de Fuca; but — there was the rub — how to bind this vast domain in a unity? The answer to that question — was transportation; and now steam came in the picture.

Chapter III

The Mill That Walked On The Water 1800–1830

WHEN poor Evans rigged up his little contraption with a paddle wheel behind to kick like a boy swimming, and four wheels below to run on land, and a "puffing Billie" snorting sparks and smoke in the middle, he was not



OLIVER EVANS'S STEAMBOAT AND WAGON

Eructor Amphibolis, 1804

One of the strangest early steam-driven contrivances was this fantastic mechanical amphibian which "kicked" its way ahead on both land and water.

the first to dream of contrivances that would "walk on the water." Fitch, the peddler, had preceded him by twenty years.

For nearly five thousand years, rivers had been the Main Streets of commerce. Nineveh and Babylon grew to be hubs in the wheels of traffic because they

occupied strategic positions on great rivers. Tyre, with her purple sails and silver-plated, fish-shaped prows with ivory banks for rowers, grew to be the center of opulence in the East because she had carriers that would walk on the water. Egypt became rich because she had a Nile for a water road. How long it had taken men to develop inventions from log raft to dugout and their skin coracle and birch or hickory canoe, we do not know. Anyway, at that point among primitives there was a dead stop. The many sails of four-masted wind-jammers above decks, and banks of three-tiered slave rowers below decks, with oars in long sweeps fifty-three feet out, came later with the civilization of Egypt and Greece and Rome and Spain and England.

As far as America was concerned, progress stopped dead with canoe and blanket sail. It was only when the white pioneer came with axe and saw that rafts were rigged up houseboat fashion, thirty to forty feet long at a cost of forty to fifty dollars home-made, and ten dollars extra for cables to warp round trees on the bank. Then long migrations were attempted downstream afloat with the current. Because it offered the longest unbroken float downstream, the Ohio chiefly became the path of the great migration west. Inasmuch as the law of life is motion, there is much here to explain why the flag of progress in the East lowered and the ensign of advance rose above the ever-marching frontier in the West. It was the Lure of the West that forced the building of rails in America. The trouble in America was that, even with

the keel-boat raft to float down with the current, the cost to send wheat out to market was three times the price of the wheat to the grower.

When men were debating steam to cross the Atlantic, a learned scientific doctor in England stood up wide awake and sober and cocksure in the profundity of his ignorance and pronounced verdict: *" a voyage from Liverpool to New York" by steam " is as im-*

The triumph of steam was complete when the *Savannah*, the first steamship to cross the Atlantic, made its pioneer voyage in June, 1819. The trip took twenty-nine days and eleven hours.

possible as a flight to the moon." When the Savannah with side-paddle wheels driven by steam and sails in case steam failed — ninety-nine feet long, three hundred fifty tons — did cross the Atlantic in June, 1819, and was mistaken by watchers ashore for a sloop on fire, her owners advertised the day of leaving but did not dare venture the day of arriving, which was twenty-nine days and eleven hours afterwards. She

had thirty-two staterooms for passengers; but not a single soul would risk life by going as passenger. If you sometimes doubt whether we are progressing or slipping back, compare that to a passenger liner a hundred years later, one nearly eight hundred feet long, eighty-eight beam, sixty deep, thirty-six draft, with fifty cooks, three hundred stewards and helpers, eight decks, a crew of nine hundred, berths for two thousand to three thousand passengers, fuel enough to fill twenty trains of thirty cars with coal, bands, orchestras, daily news and radio bulletins, and more meat and cereals on board for five days' passage than a hundred-sixty-acre farm could supply. If you want to emphasize the comparison in little things: in " the good old days " the only lamps were candles, the only heat foot bricks for passengers; and hard salt sea biscuits with soup was considered best fare for steerage passengers.

Rivers might be highways; but they would not run uphill; and America's hills were mountains. Her portages were ascents and descents of from two thousand feet in the East to ten thousand in the West.

There were as yet no canals. Besides, canals froze over.

There were as yet no locks to dam waters in canals and lift and let down ships.

Faith might remove mountains. There were as yet no tunnels to do the job.

Europe's rivers were as shallow ditches compared to America's five great water highways: the Hudson, the Ohio, the Mississippi, the Missouri — which was

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really "a spiral stairway from the mountains to the sea," forty-two hundred miles long, the longest water highway in the world — and the Columbia, which was a mountain flood, not in the coils of a python like the Missouri, but in the deep canyons and dizzy falls of a dozen Niagaras.

Of bridges, except planks, there were almost none.

Yet the pioneers kept moving westward with the faith of little children, or fools.

If you ask why the South with the very best blood of Saxon forebears moved westward slower than the Middle East, the answer is to be found in four significant "S's" — the sloop, the slave, the swamp, the swiftness of the short rivers to the sea. Cotton and tobacco were the great crops. The most of the planters could build their own little sloops and send them down to the sailing vessels on tidewater. When goods came back from Europe, there was the slave. By tying horses or mules head to tail, provisions could be packed in with cheap slave labor to run abreast under a foreman and ascend the streams by bridle trail ashore. Drainage of swamps was not even contemplated. Though the rivers were placid through the plantations, as they approached gaps in the mountains westward they were terribly swift and shallow.

It was the daredevil fur trader who attempted the impossible of circumventing river navigation up and down stream first. By the time Lewis and Clark were ascending the Missouri, he had perfected his own rude contrivance for immediate needs.

To the canoe, chiefly for the Great Lakes, where

canoes swamped in cross waves, he had added the mackinaw boat, made of wide planks and wooden pins, flat-bottomed, cross-timbered, fifty to ninety feet long, sharp at prow, sometimes square at stern, three to five feet deep, with water-tight compartments. The cargo came three to four feet above gunwales, and was made fast with ropes through cleats under oilskin covering. The steersman stood at the stern with a long pole and a vocabulary to drive men to drink or death, to both of which they frequently went headlong. The oarsmen used pole, paddle, sail, as occasion warranted; and when they were bouncing downstream where the high water carried over sand bar and rapid, tied a tree as a rudder balance sweep to rear, erected blankets as sails and sang, at the top of their lungs, river songs which are chanted in habitant French to this day.

The hours were twenty-four a day. The pay from one hundred twenty dollars to four hundred dollars a year with "grub" of pork, rum, biscuits, soup, and what game they could shoot when they tied up at night. The pace was ninety to one hundred fifty miles downstream, forty to fifty up. A mackinaw seldom lasted more than its one trip when it was broken up and sold for lumber, and the crew set to work building another craft for the return journey.

The keel-boat was pretty nearly an ark. It might be ninety feet long and twenty broad and draw thirty inches. Its cargo box ran the length of the deck but not often higher than five feet. Its cable was one thousand feet long, fastened to the top of mast or to

one of the midship thwarts; for, fastened to the prow in a storm, it would have twisted the ship across the wave wash. This was primarily the craft for up-river work, and desperately hard work it was. Where there were no snags alongshore, the lower line could be used. Where floating trees and brushwood would have entangled the cable, the rope from the mast head was used. Such a craft was suitable only for river travel over plains. Forty men got out and pulled or cordelled or warped the craft upstream. Oars, poles, paddles, sails, all helped upstream. The mast might carry a hundred square feet of canvas; but that was dangerous on the Missouri where hot winds came in hurricane blasts on the river, sometimes wrecking the boat or hurling her cargo house to splinters in a tornado. Like a deer scenting the wind with a moist nose, the boss steersman at night would hold up wet forefinger and feel the wind. He would scan the western signs. A sun like a bloody shield in the dust of the prairie, or a moon rising red in the dusk, with an angry ramp to the bursts of wind and perhaps sheet lightning in flames afar — boded no good to Missouri boats. The captain would tie up for the night under shelter of the west bank — the highest bank he could find; but that was not always safe. In hurricane rains — called in the vernacular " horned breezes " — the soft bank might cave and slide, or the treacherous floods jump their bed; and farmers along the Missouri have found embedded in their fields ten miles from the river boards with names of old Missouri craft lost in some hurricane storm or flood, which had

swept a wreck far over fields and buried the crew no man knew where. Of river craft on the Missouri it is rather terrible to record that for almost half a century forty per cent was regarded as light loss for a year. In years when floods hurled floating logs in snags on unseen sand bars as many as seventy per cent of the river ships were lost. What became of the crews? Who knows.

Then there came a day — it was an unbelievable day in Indian legend — it was midsummer 1818 on Lake Erie, about 1830–31 on the Missouri — when the Indians heard the deep bay of what was neither hunter nor hunted, and looked across the water to see — a great canoe, a house without sails, without paddles, on fire, walking the waters. They fled in terror and called the whole camp to come and see. What was it? It was a great canoe on fire. Yet it didn't burn. It walked on the water. They called it "a Millwalkee" on Lake Michigan; "Walk-on-the-Water" on Lake Erie, and "a Fire Canoe" on the rivers of the West.

Steam had come!

To the shouting signals of the Indians, the amazing ship on fire uttered a terrifying hoarse roar with a hiss of steam in a stream through the air overhead. That steam in a white stream was another flag of progress though the Indians did not know it. Later they did know it and knew more. They knew it presaged the coming of more and more white men. They realized it meant the passing of their own era forever. Henceforth — yes, down to the seventies — the

plains tribes were relentless foes to steam. They pitted the double jackets round exposed smokestacks and boilers above decks with bullet holes. They threw ropes across narrow channels in the river to snag the paddle wheels or slew round the prow on sand bars. They hid behind sand hills and sent fusillades of shots at the pilot house. Steam had to have firewood. Firewood could only be obtained ashore. The Indians set fire to piles of cordwood left by white choppers or charged outrageously for any chopped by themselves. When choppers went ashore, they were pillaged, stripped naked, scalped, robbed, harassed. In fact, when one poor white was put ashore with smallpox in quarantine near Pierre, South Dakota, he had his blanket stolen from under him, which resulted in a ravage of smallpox from the Arkansas to the Athabasca and left the warriors of the plains weakened for twenty years.

Chapter IV

"Fulton's Folly"—"The Sawmill On Fire." 1804–1830

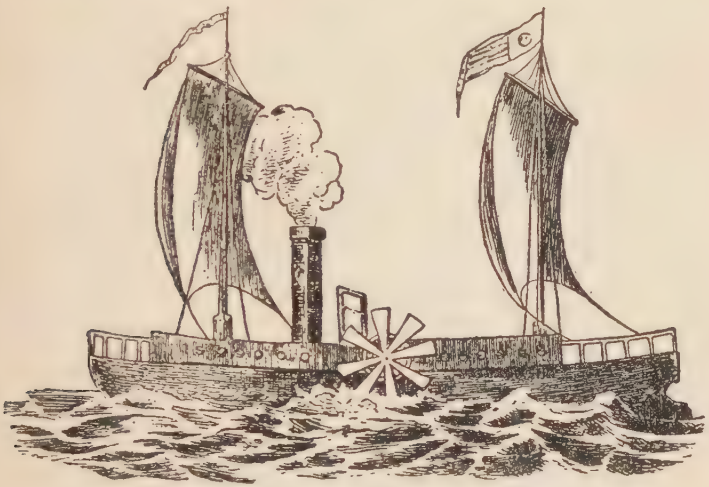
ABOUT the time the wise wigs in Europe were fulminating about the impossibility of using steam as power for land or sea, a farm boy of seventeen had gone from a rude homestead in Pennsylvania to seek his fortune in Philadelphia. His name was Fulton. He became apprentice to a jeweler and studied art at night. Art, of all things in the world, as a foundation for mechanics! Aren't artists about as impracticable dreamers as can be found to build solid structure for commerce? This boy wasn't. He saved four hundred dollars before he was twenty-one, bought a farm for his widowed mother and went off to London to study under Benjamin West. Now London may have been full of dull-witted diplomats in 1786, but it was ringing with word of wondrous discoveries made on the Pacific Coast by Cook and about to be followed up by Vancouver. Fulton's jewelry experiences switched him into all sorts of useful and useless inventions for dredging harbors, making locks for canals, and what not — but all tingling with the tang of the sea. The new Republic was very friendly to France. Robert Livingston was minister to France. Fulton had an idea for a submarine to help Napoleon. Napoleon's engineers had no time for Fulton; but Livingston had. He and Fulton had devised a steamboat that worked on the Seine, as early as 1803; so the two came back to America as partners. Fulton was not the inventor of steam power for the

sea. What he did was to take all the inventions prior to his own and make them practically workable; but he could not have done that without Livingston's financial backing. He required large capital, which Evans and Fitch and even Stevens of Hoboken had failed to get. Livingston's partnership brought that capital. Yet when Fulton died in 1815, his venture was not yet a paying one. He died as he had begun — poor.

It was three years after poor Evans' scow for land or water had proved steam a workable thing that an English engine put in a river boat made a trial trip, August 17, 1807, up the Hudson from New York to Albany and really achieved one hundred and fifty miles in thirty hours. Scorn turned to wild acclaim. Perhaps poor Evans had not been such a fool. Perhaps Colonel Stevens of Hoboken, who had tried steam on water nine years before the *Clermont* went up the Hudson, hadn't such a crazy bee in his bonnet either! Perhaps Fitch — but Fitch — bless you, who was Fitch anyway? People had forgotten his very name by 1807.

But your eyes couldn't lie. There was that Fulton farm boy now a man aged forty-two, backed by such a wise man as Livingston — one of the richest aristocrats of the Republic — with Noah's Arks run by steam on the Hudson; yes, sir, it could go twenty miles an hour if it didn't stop at local river points, fast as a whole day on a sailing sloop, with shutters over the windows and two berth staterooms and carpets, and "bars" for gentlemen, and lounge rooms for

ladies; and she pumped and splashed up the Hudson with a white train of water fret behind her and a white plume of smoke above her graceful as any lady ever seen. She was the year's wonder of every farm lining the Hudson. "Watch for her coming back —



THE "CLERMONT," FROM A PEN AND INK SKETCH BY

yours Robt Fulton

When the *Clermont* pumped and splashed her way up the Hudson, in 1807, America went steam-vessel mad.

look — there she comes." The people on board the decks sang in the moonlight and cheered the folks gaping on the docks. No more stage journeys where you had to get up at midnight and wallow through mud for days. When the steamers whistled at the docks, lanterns came swinging down the town streets

and farmers came out and shouted " there she goes," and felt a curious thrill as they saw the lights in the staterooms above reflected in the water below. It certainly was an upside down world. The rabble, which had scoffed loudest, was now ready to chuck a sceptic off the docks.

Steamboating now went ahead so fast on the Ohio, on the Hudson, on the Lakes, on the Chesapeake, that it is hard to pick out authentic records of progress; and it was not opposed as the railroad was later; for where navigation ended, or winter chained the rivers, farmers and teamsters could make good easy money in off seasons by transporting passengers over portages — whether heights of land or falls — and the passengers, who transferred back from sleigh, wagon, coach, to the comfort of crude berth-beds without springs, were so glad of the restful change that they were not inclined to criticize the ship's cook and the charge which was not so high as land travel, and the clang of bells and racket of teams and cargo at midnight breaking in on sleep. Transfers were all gain to the farmers and all gain to the taverns, however loud the old coach lines and turnpike toll men howled " blue ruin " to high heaven.

Fulton and Livingston were quick to grasp the amazing opportunity for steamboats on the great rivers of the West — the Mississippi and the Missouri. Though Lewis and Clark's great achievement had been eclipsed by the War of 1812, there were huge cargoes of furs and supplies to be carried on the rivers of the West. Thither Fulton and Livingston

sent Nick Roosevelt to report at points from Pittsburgh to New Orleans. In spite of the Great Falls of the Ohio, which would necessitate two different lines, — one above the falls, one below — a boat one hundred sixteen feet long costing thirty-eight thousand dollars was put on at Pittsburgh. Pittsburgh shook its bewhiskered frontier head. "The thing might go downstream; but dang if it would come upstream!" Roosevelt had to wait at Louisville for high water to attempt to run the falls; and while he waited, he steamed back up to Cincinnati. "Gee-whittiker! There she was back up again. No use saying she couldn't do it. There — she'd done it." From that time on, steamboats of all sizes and sorts with barges and rafts in tow became a regular feature of river travel from Pittsburgh to Louisville and from Louisville to New Orleans. Fares and rates fell by half, cargoes and passengers increased by many more than double. By 1819 there were sixty steamers between New Orleans and Louisville. There were sixty on Lake Ontario and fifty-one at Detroit a few years after that first *Walk on the Water* astonished the Indians of the Upper Lakes; but the Missouri was a tougher highway. There the first steamer did not reach beyond Pierre before 1830–31, and did not get back up to Fort Union at the entrance to the Yellowstone till Catlin's famous voyage of 1831–32. It was slow going up the muddy, sand-barred, windy, tree-snagged, yellow floods of the longest river in the world. The steamers had, like the keel boats, to tie up at night; and by the time they had reached the

Yellowstone from St. Louis, ice was blocking the current; so the tie-up was often for a long winter. Yet, by the late thirties, there were on the Mississippi proper and the Missouri not fewer than two hundred thirty steam-propelled river craft. Old boatmen did not resent the innovation; for the steamers employed five thousand flatboats and two to three thousand river pilots who had to be hired locally for knowledge of sand bars, and sharp bends, and ugly sucking undertows in the current. It is interesting to know that in spite of the frightful disasters that overwhelmed his early sailing ventures to the Pacific, John Jacob Astor was one of the first backers of steam for the fur trade both on the Great Lakes and on the Upper Mississippi.

The great mistake of the Fulton-Livingston firm was to claim a monopoly in their patents for river traffic. They had really only utilized and improved the inventions of their forerunners. The moral and legal right of an inventor to a monopoly in his patent, and a royalty from his patent by all who use it, has been established and recognized in modern courts; but that was not where Fulton and Livingston came in collision with public sentiment. Monopoly of any sort stank in the nostrils of struggling states. Laws on interstate commerce had not yet been formulated. Besides, what was to hinder other inventors improving on poor Evans' land and water scow, or Stevens' devices over in New Jersey, and putting steamers of their own on coast and rivers and lakes? Fulton and Livingston's patents were protected only by the courts

of New York. The Hudson wasn't the Mississippi and it wasn't the Chesapeake. Much less was it the Great Lakes, where the Canadian fur traders were putting on steamers of their own. The lawsuits to defend their monopoly did as much to drain Fulton and Livingston's profits as the terrific outlay to meet new demands for steam carriers. If it was "sauce for the goose" over in New York to hold a monopoly, then it was "sauce for the gander" over in New Jersey and across on the Mississippi to hold like monopoly; and that brought the Fulton and Livingston firm in violent collision with that indomitable young schooner-ferryman, Vanderbilt, and that later buccaneer, Daniel Drew.

It was a case complicated by lack of law. Fights in courts are usually complicated by too much law. There was no Interstate Commerce Commission. There was still a twilight zone undefined between what the states could do under the Constitution and what they could not do. There was still the vague, almost parochial view that each state could back out of the Union if it wanted to — could go its own way in self-government if so minded. That dispute had still to be settled by the bloodiest war in the Republic's history; and the Republic was not yet forty years old.

Young Cornelius Vanderbilt, now in his early twenties, had been one of those free-lance, independent, lone-hand individuals who from purely selfish motives have done more to build up the United States than armies of uplifters who have prated of altruism

and the other fellow's rights because they had neither the brain nor the brawn to do anything unaided themselves. First as an owner of small schooners, then as a ferryman between points in Staten Island and New Jersey and New York, then as a supply runner for the troops in the War of 1812, Vanderbilt had built up for himself a fortune.

He was not only independent. He was violently, belligerently independent. He felt that the schooners built under his supervision from masthead to keel could show heels to any scow with cinders and boilers and what not endangering cargoes and passengers. That is — he had felt that way until he saw those sawmills on fire, with grasshopper rods pushing a wheel round faster than wind could drive sail, go pumping past him with a derisive yell from the jolly passengers leaning over deck rails. He might shout back but he didn't like their jeers. Much less did he like the brutal fact they were getting his cargoes. He was not one to butt his head against the stone wall of facts; so he took passage himself on the *Fulton* to Albany and back. He had the eyes of a lynx and the instinct of a wolf, and never a theory to hamper him. He saw lots of places where Fulton and Livingston's ships could be improved — more deck space, more cargo space, devices to improve the engines, increase the speed of the paddle wheels; but when he came back he recognized the cardinal facts:

Steam had beaten sail.

It had beaten it for all time.

It could defy wind and weather.

It could carry more passengers.

It could lower rates and freights and by drawing more business could not only make up for the difference in rates but far surpass that difference in profits.

All sorts of conflicting laws were passed. Passengers by steam were taxed. The tax did not affect short hauls, only the long. Then Fulton and Livingston had that monopoly for twenty years; but these laws carried force in New York only. Vanderbilt decided to try his luck in New Jersey; for New Jersey and Connecticut were about to refuse to permit vessels plying under a monopoly to enter their ports. Of course, vessels which could operate only between New Jersey and Connecticut and not come into New York waters were going to lose the profitable end of freight and passenger business; but Vanderbilt had run schooner transports in the War of 1812 and had yet to encounter the minion of the law he could not outwit.

To make a long story short — in fact, a fight of seven years — he tied up in a partnership with a New Jersey man who had the backing of a former state governor. Then the two defied the monopoly of New York State in order to force the Fulton and Livingston crowd to sue them — to put the test of the monopoly in the courts. Once, when the process servers were ready to seize Vanderbilt in New York waters, they found at the pilot wheel, not Vanderbilt but a young girl.

When the case finally went up to the Supreme Court and John Marshall handed down the decision in 1824, there was laid down in plain terms *the clear*

fact that no one state could lay a monopoly on another state. The Constitution gave the Federal Government the only power to control interstate and foreign commerce. Of course, that killed the monopoly utterly, though already it was ignored both on the Lakes and in the West.

Steam had won in its first big fight.

PART II

The Lure of the West

Chapter V

"The Most Expensive Gutters In The World." 1800–1830

WASHINGTON died shortly before Louisiana became a part of the new Republic; but he knew Gray had discovered the Columbia. Scores of New Bedford whalers and Salem traders were making yearly trips to the North Pacific before 1799.

Everyone recalls the famous picture of Washington crossing the Delaware through an ice jam. What he thought as he witnessed his ragged troopers tossing amid the ice piled up by current and tidal waves was probably that he had to win the Revolutionary War; but no man either before or after the War for Independence knew more of the awful conditions of all roads. On no subject did Washington harp and hark back and emphasize more than roads. He had floundered through their mud, autumn and spring; he had been bogged and impeded by their snows and ice in winter; and as a retired farmer he realized that summer, the only open season for American roads, was an off season. The farmer couldn't get his crops off till the fall, when ice closed the Northern highways — water and land — and floods too often endangered Southern and Western lines of travel. It is rather ridiculous here to refer to strictures of study-chair theorists as to the famous picture of Washington amid an ice jam being grossly exaggerated. Yet when the rivers of Northern New York, Vermont, and Connecticut went on a rampage in the summer of

1927, every paper in the Eastern States carried pictures of worse devastation, where motor highways lay under fourteen feet of water, rail bridges had been undermined from piers to spans, and whole villages laid flat as shingles.

Washington has been called the Father of his Country. He has also been called the Father of American Transportation.

In this he was in unanimous agreement with the master minds of his age. Madison, Adams, Jefferson, Gallatin, each and all realized that the Republic could be bound in unity only by common highways. Gallatin compiled and issued one of the first complete Federal reports on roads. Monroe had first vetoed laws to aid turnpikes, ferries, canals, with public lands. Then, realizing that the states were too poor to do the job themselves and that the old system of compelling every farmer to help on the road passing his homestead left appalling gaps of mud sloughs between the occupied lands, Monroe revised his early veto and authorized the grant of public lands.

Many people regarded the railroads as the first big land-grabbers. They were not. From Monroe's day, help of every sort, bonds, cash, loans, land grants, were authorized for ferries, bridges, turnpikes, canals. The first land grants to " wilderness roads " were in 1803 for Ohio. Five per cent of the proceeds from sales and tolls were to go back to the treasury — three per cent to the state, two per cent to the Federal; and toll gates had to be built every fifteen to twenty miles. Indiana, Illinois, Michigan, came in for

similar aid with similar returns for the state and Federal cash loans. There were few if any records of the government treasury boxes benefiting. There persists an equally foolish idea that national ownership of highways is a new cure for all traffic ills. It is not new. Neither is it a cure. National ownership was tried in every state in the Union down to the Civil War; and please note the fact, — not the theory, — it failed in every single case. It bankrupted the state treasuries. Where the need was greatest, the population was sparsest, the returns smallest, and the resultant taxes heaviest. When rates were raised to make canal or highway pay, the high rates at once decreased travel and freight; returns went down and taxes up. When rates were fixed low, the national experiment didn't pay; and again up went taxes. Traffic has a curious resemblance to an old-fashioned beam on a weighing scale. Force one leg of the beam too far down, and the other leg has a way of kicking too far up.

Washington, Gallatin, Adams, Monroe, Jefferson, were educated men with a world outlook and world knowledge. They knew that the Chinese had one thousand miles of canals as early as 500 B.C.; that Mesopotamia had one thousand miles of canals connecting the Euphrates and Tigris, at least four hundred years before Alexander the Great; that modern France had a network of canals, and rivers improved by canals, to the extent of three thousand miles. Yet France would hardly cover a patch on the map of the new American Republic.

Was it any wonder, then, before steam became a power to push and pull, to bore through mountains or climb them as a fly climbs a wall; to build bridges for passage across rivers, or propel boats on waterways, which bridges couldn't span, that the greatest minds of the new century first turned to canals as one practical means to get highways for trade?

In this they were, of course, backed by the public — backed furiously, vociferously; for necessity was the bayonet stabbing the public. Take two examples. A dozen could be given from Cape Cod to Florida. You could send your sloop up the Hudson. Between Albany and Lake Champlain came a section where your sloop couldn't go. All right. What did it matter? It mattered so much to New York City that all Northern New York State traffic was going down Lake Champlain to Montreal.

Or suppose your sloop nosed up the Mohawk, the way of the old Indian canoes. Came falls, rapids, shallow waters — a whole succession of them, easy for a light canoe to portage, impossible for a ship with cargo. Well, what did that matter? It mattered that all Western New York traffic slipped over to Lake Ontario and the St. Lawrence and went down to Montreal. New York was losing Western traffic. Boston would get by coast craft the Northern tier of Atlantic States; and New York would get what? — Pretty nearly nothing but Hudson River traffic and such ocean traffic as the little strip along each side of the Hudson would support and take back in trade. New

York merchants and shippers had to bestir themselves, or see Manhattan become a shoal-water port.

We may denounce New York's commercialism; but New York is the second greatest commercial port in the world to-day because far-visioned men laid the foundations of New York's greatness by the faith that removes mountains.

Take another example — the terrible Cumberland Mountains and Blue Ridge barrier between the South Atlantic States and the Ohio. Here, if your sloop poked up the Chesapeake, whether she nosed into the Delaware or the Susquehanna, she was again stopped, as were the sloops up the Mohawk. If she went up the Potomac or the James, there were the terrible barriers of the Blue Ridge and the Cumberlands between her and the Ohio. Well, what matter? No matter except that all the great new Western cargoes would go down the Ohio and the Mississippi, to the loss of Baltimore and Philadelphia, and build up those muddy frontier village flats, St. Louis and New Orleans.

It is a pretty good guess that the average frontiersman cared not one stiver for the big city plans of New York, Philadelphia, and Baltimore — cared not one stiver, and knew less. His nose was too close to the grindstone of making ends meet. The ends could not meet. That was the trouble; and he could not stick — except in the mud of his own bad roads — unless the ends did meet, and overlap, and leave him enough to live and save against old age and the rainy day.

It was the cost of getting stuff to market and getting stuff back from the market that made the frontiersman a desperately urgent factor for roads.

What was that cost?

Up to 1800, it cost four dollars and eighty cents to get a bushel of grain seeds or grain feeds from Montreal to the head of the Great Lakes; and that was the cheapest water highway in the world except the ocean, which didn't in the least benefit the inland farmer. His difficulty was to get his stuff down to and back from the ocean.

In 1790, it cost the farmer in Western New York over twenty-four cents a bushel to send wheat to New York.

It took three months to get a cargo from Pittsburgh down to New Orleans.

Little marvel that citizens, statesmen, farmers, frontiersmen demanded highways, whether land or water. Less wonder that wise men guided by the experience of the past turned first for relief to turnpike roads, bridges, ferries, and most of all to canals, which had proved serviceable in older lands.

From 1800 to 1830 when steam came, turnpike charters, bridge and ferry concessions, coach companies, and canal financing became an epidemic gambled in as madly as ever rail shares were kicked and shuffled about in a frenzied stock exchange. In one year thirty-six small bridge charters — pure monopolies — were asked from New York State alone; and in 1808 more than half a million was spent in projected, completed, and collapsed bridge ventures.

Lotteries were held in New York and Pennsylvania to raise money where public grants fell short and public subscriptions failed. It almost staggers one to look up old annals and find that many of those poor turnpike roads cost from nine thousand to thirteen thousand dollars a mile — as much as a Western prairie steel road, where ties and rails and box car for a station were dumped on the plains above flat land or muskeg that swayed and rose and sagged as a rattle-trap train rocked over the steel.

Gallatin's Report in 1808 — the first complete survey of transportation in America — covered amazingly from Maine to Florida, from the Atlantic to the Mississippi, from the St. Lawrence to the Great Lakes, and the little inland links that would be necessary. If read by European diplomats, it must have provoked a patronizing smile. Here was a Republic not thirty-five years old, with not four million people, laying out highways covering distances vaster than the Roman Empire with its fifty thousand miles of roads. Incidentally, it may be set down that the Republic a century later had railroads alone covering almost six times greater distances than the Roman Empire's, and they were built neither under imperial ægis nor by slave labor. They were built of the individual's savings pooled in a thing called capital with free labor, drawing, during the War of 1812 and during the Civil War, higher wages than ever before known. Sometimes, the capital came dribbling in $1 subscriptions as in Pennsylvania; sometimes, as in New York, in $100 subscriptions, paid in $3 assess-

ments up to fifteen different assessments, when the frequent changes in ownership make it impossible to learn whether the balance of assessments were paid.

Bridges that would slew round giving open way for sails and smokestacks were as yet unknown. Bridges roofed to protect from snow were dreary and dark. Dickens complained about the gloom of these bridges. When lanterns first began to blow back and forward in the dismal rains of New England above a bridge at Boston, in 1786 — proudly described as the longest in the world at that time, 1,503 feet from first pier (of wood) to last pier — the citizens were invoked to go and inspect " the forty elegant lamps to illuminate *when necessary.*" The lamps were to burn only " when necessary."

But canals — first!

Before the Civil War, the country had fifty-two navigable canals, and fifty-four rivers had been tabulated as navigable in sections or parts. These canals did not come as full-grown waterways. They came in fits and starts, in bits and breaks, as the money could be raised or necessity forced action. The great water track later known as the New York Barge Canal had from fourteen to nineteen different sections before it was known as the Erie Canal, 352 miles from Albany to Buffalo; and because it was not continuous, by 1825 it was sneeringly called " the longest gutter in the world." Long before it became the Barge Canal, nine million dollars had been absorbed in its four-feet depth and forty-feet width. Much later, when it had absorbed two hundred millions, it was again called

"the most expensive gutter in the world." By the middle of the century, the country had almost 4,500 miles of canals costing over two hundred millions — of which more than 2,000 miles had to be abandoned and 2,000 more could be used only in part. In thickly settled sections where no other route was available, as certain sections of New York, canals could pay thirty-one per cent dividends. Other sections never paid a dividend in the twenty to thirty years of their existence. In Pennsylvania, also struggling frantically to get traffic from the West to the Atlantic, canal stocks sold at one hundred per cent above par by 1832.

The reasons for the failure of the inland canals, when such later ocean highways as Panama and Suez diverted and captured world traffic, hardly need telling.

The canal was slow.

It wound in and out and round about as the hills twisted and turned.

It was too shallow for heavy or deep cargo.

It froze up just when most needed.

And when steam came — steam was swift.

Steam was direct. It could go through or over mountains.

Shallow or deep waters made no difference to steam.

Winter or summer, steam could ply over its swift shuttle of rails.

Did the canal give up the ghost without a struggle to steam? It did not.

The canal at first compelled steam to charge as low as water to get traffic. It did more. It seems amazing to record the fact. Although canals did *not* pay either private or state builders, their power was so great in the legislatures that they compelled the railroads (1) to pay a rebate of their profits to the canal and (2) they forbade the sections of rail where canals were *not* paying to carry freight at all. In such sections rails had to confine their traffic to passengers. These laws were not fully repealed until the fifties. Rebates and land grants did *not* begin with rails. They were forced on rails by law at the behest, or lobbying, of hostile water and common road investors.

It was as inevitable that steam rails should surpass the slow barge on the canal as it was that the hissing paddles of the steamboat should go flashing past Vanderbilt's swiftest schooners. It was part of the epic of speed.

Yet to call the canals planned by Gallatin in his great report "the most expensive gutters in the world" is unfair. They served their day and served it well when nothing else served in a more leisurely slow-moving age. Though Leonardo da Vinci in the late fifteenth century had devised locks, no locks did the first canals know. It was a case of digging a ditch between the head waters of rivers, or from lake to river, or from swamp to seacoast, and letting the shallow craft down by natural flow. No sitting snug in a tower beside gigantic concrete walls, touching an electric button and swinging great gates open or shut to let the ship ascend or descend with the lift of

It is interesting to see how the development of the New York Central Railroad from Albany to Buffalo paralleled the old Erie Canal, once sneeringly called "the longest gutter in the world." The canal did not yield its supremacy to the railroad without a bitter but futile struggle. The small dotted line shows the route of the canal; the heavy black line, that of the railroad.

waters. The ship had to take care of her own means of push or pull. No electric puller shuttling along on land abreast the ship to tow her through as in modern Panama. The canal boat floated down with the current; going up, mules were hitched to her fore thwarts and sent at a walk or gallop up the towpath; and many a poor New England boy earned his first wages to work toward that Eldorado of glamour — the West — by driving the towboat mules. Didn't Garfield begin life as a mule driver along the towpath? When steam invaded the canal with its white flag, great floats and barges followed the tugboat like pompous grand dames followed by lackeys into court.

Canals served their generation. That was enough. More leisurely folk than we are sat on the hurricane deck — and, I doubt not, made love under the moon and thrummed guitars; or leaned aslant under dainty parasols and paid the cumbersome compliments then in vogue; or smacked their skin-tight satin trouser-legs in jokes more ponderous than the compliments. "Hah, ladies, but this is progress!" Reading the diaries of old canal-boat travelers, one comes on starry nights when crews and passengers sang old-time song to the thrum of negro guitar; or danced old jigs on the hurricane deck; or watched Venus blink in and out of the western sky. There is no impression of people who knew what hurry meant. Hurry was considered vulgar — the symptom of a confused, ignorant mind. If a gentleman were quick mentally, he masked it under an elegant pose of dalliance and plied his mental speed unsuspected. If it rained, pas-

sengers could go below and enjoy mint juleps. They took these slowly in sips with the gusto and relish of connoisseurs; or the gentlemen could "hurdle jump" those "bars" in retired sections of the boat, while the ladies — bless 'em — reclined in the lounge room, or retreated to rooms with berth-beds. It was on the whole a happy transition from post-road travel as one writer describes it, "with all the comfort of a home."

Perhaps the worst legacy of those old days which has come down to curse us was the confusion in the public mind between the highway as a state-owned thing and the highway as a thing owned by private investors.

When the canals failed financially — as nearly all did — and were assumed by the state, the public came to regard highways as state owned; but when rails came along, and state-created and state-owned rails failed financially, and private investors took up the collapsed projects and put them through by assessments on private purses all the way from $1 a share to $100 a share and the private investors drew not a dividend for twenty years, drew not a dividend at all, many of them, till absorbed or sold to stronger private investors; who owned the highway then — the state or the investor? That is a contest that confuses us to this day.

AUTHOR'S NOTE

The very best example I know of rail beating canal is the old Miami connecting the Ohio with the Great Lakes. This canal was begun in 1820–22. There was not a mile of rails in Ohio for another ten years.

Ground was broken at Cincinnati amid such jubilation as later serenaded rails. The first forty miles cost $11,000 a mile, more than to lay a prairie railroad. But freezes came for forty-nine days and mud silted up the shallow bottom and lands had to be granted by Congress to go on by 1828 — over four hundred thousand acres. Canal stocks were freed from taxation. Banks came to the rescue with generous loans. School lands were sold to raise money. Toll rates were raised to five cents a passenger a mile. The land sold at from two to four dollars an acre; and the grand total cost of the canal rose to over $4,000,000 for 289 miles — over $22,000 a mile, exceeding the cost of rail building in the foothills of the Rockies. Public administration, private management, state commissions — all were tried. From 1857, when rails in Ohio increased to 2,834 miles, the canal could not make revenues pay even the expenses of operation, let alone interest on costs. The rails at this period boasted a speed of twelve to thirty miles an hour. The canals averaged two to eight. The receipts of the rail were *net* $5,000,000 in 1858; the receipts of the canal $4,000 less than the cost of keeping open. Finally, when the loss to the state went up to $8,000,000, Ohio quit cold. She had paid a very high price for her experience; and no wrecked rail had "filled the canal up." The rains did that job. It was an "expensive gutter"; but let us not condemn too harshly. It served its day and left a lesson that ought to have a monument. Ohio was determined to make that canal pay whether it could or not; but how could it charging two and a half times higher than any rail in the state and at best twice as slow and twice as uncertain?

The Chesapeake and Ohio Canal cost $60,000 a mile, as much as for a rail in the hardest section of the Rockies. Within fifteen years 8,500 miles of canals were built in New York, New Jersey, Pennsylvania, Maryland, Virginia, costing $250,000,000; and of that total, half can be set down as utter loss. Few rails in the worst buccaneer period surpass that record.

Chapter VI

Tom Thumb Races The Gray Mare For The West. 1828–1848

STEAM had beaten sail on water. How about land?

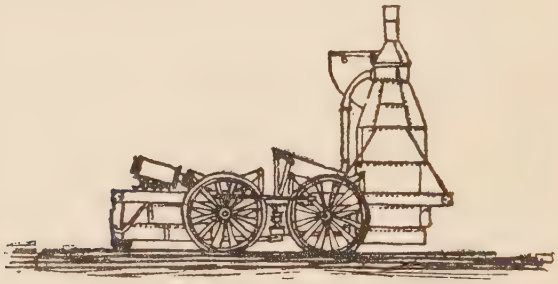
Steam development on land was prodded and forced by the same factors that had compelled the building of canals, then the use of steam as a propelling force on canals and rivers. While the Atlantic cities were backing canals in a wild speculative mania, chiefly to keep all traffic from going to rival cities, it was the great traffic to and from the West for which they aimed. It was really that race for Western Empire which did not end until our own day, when the last spikes were driven to link Atlantic to Pacific.

The greatest impediment to steam on land in the race westward was lack of experience. The series of mistakes produced a terribly heavy casualty list. We may smile at those mistakes, but they were not laughable to the enthusiastic backers of steam on land. Steam needed money. Money from hard-working folks, who had saved, can't just be burned up in tryouts. It must have at least a sporting chance for some returns.

Consider a few of the early mistakes that paved the way for future success. Those blunders must have broken many a heart and crippled many a purse. They can be massed together: all the new rails made similar errors — rails from Boston, rails

from New York, rails from Philadelphia, rails from Baltimore.

In England, the roadbed was laid for eternity; but the engines were very light — five, seven, ten tons. In America, almost opposite conditions demanded practically reverse construction. England was in the main flat. America had terribly high and steep grades and an appalling number of sharp and long curves. America was too poor to construct roadbeds for all



The Best Friend.

The vertical boiler was one of the clumsiest features of some of the first steam engines. This engine had a grasshopper leg to hurl the wheel around.

time; besides, they were not advisable. Such heavy granite, inflexible roadbeds were too hard on light engines with a heavy load. America could use a lighter roadbed, but needed a heavier engine for hard grades and bigger loads and vastly longer distances.

Were the rails to be iron or wood? At first wood was used with an iron strip laid flat on top; but in heat and frost that iron strip had a trick of curling up, and one such " snake head " — as the train crew called them — came up through the passenger car

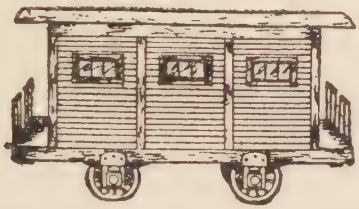
floor and "bit a lady's leg." The mishap caused a great deal of comment adverse to rails. Also, wooden rails rotted from exposure to weather. The spokes of the early wheels for engines and cars were of wood. When the train went rattling over the rails at the awful speed of fifteen miles an hour the dried hot wood "screeched." Sometimes in cold weather the exposed boilers got a chill down their spines, for jackets had not been invented to protect boilers; so directors, in deadly fear lest steam fail, tried sails and kept horses near on call to hitch to a stalled train and complete the journey. This was on a Southern line where exposure to frost was least; and it gave farmers along the right of way a bright new idea. Why shouldn't they use the new highway as a team road for hauling produce to market? Splendid! Somebody else had built the road. Why not use it? So many a terrified engine man rattling round a curve or down a steep grade with his heart in his mouth had often to choose whether to make the team jump or jump himself; sometimes the decision had to be made quickly and both jumped, with an aftermath of hissing steam and lawsuits and profanity that might shock our delicate ears. At first there were no railway sidings between many points for trains to meet and pass. The unwritten law of the road was that whoever passed the halfway point first had right of way. The other fellow had to back to the nearest station where there was a siding; but the other fellow sometimes refused to back, when the train crews got out and settled it by fisticuffs. I don't know that that law was

anything like as ridiculous as one on our modern statute books, which has become a classic — that if two trains meet on parallel sidings over a road crossing, one shall not go ahead till the other passes. How long these two polite trains are expected to stand on their hind legs and bow profoundly to each other in hisses of steam and bellowing toots — the law does not say.

Every road had a different gauge in width; so when a railway was made up of many different links, as were the New York Central, Pennsylvania, and Baltimore and Ohio, the passengers had to get out and transfer; but to keep the transfer points easy money for teamsters and taverns, many rival towns refused to give the rails right of way inside town limits. This happened not only in the antique South but in progressive New York State. These transfer points were known as " the isthmus " and famous for " rotten eggs and cabbages " when rails tried to connect. Sometimes in cold weather, when the boiler refused to heat up fast, the train crew would get out and give the rear car a tremendous push down grade; but this produced such a terror of the train getting out of control and running away, there was actually patented an invention for a great claw hammer racket wheel to rear, which could be dropped at need to grip the cross ties and hold her back. So far as I know, this was the first automatic brake. What happened to the ties so clawed up by an iron wheel with grappling hooks for cogs is not told. The device was not extensively adopted.

The turnpike roads — in which great quantities of private funds had been sunk — opposed with fury the new steam rival as they had opposed the canal. In most cases it was cheaper to buy out the turnpike company at top prices by giving it shares in the railroad, or paying the cash price and adding that cost to the capital of the rail company. This seems to have been the first "watered stock" injected in railroad capital.

In the South and West, the first passenger coaches resembled log cabins on wheels; but these did not



The passenger coaches on the railroad over the Southern Alleghenies in 1835 resembled log cabins on wheels.

yield enough revenue. Double deckers were then tried; but double deckers might upset and they raised the center of gravity too high and had to be discarded.

Until processes were devised to use blasts of air to force a coal fire, coal did not react well. Wood was the fuel; so the smokestacks were huge inverted pots, that had to have hinges to duck back under bridges; and, as there was no spark arrester, awnings and nettings were used to protect the heads of the engineer and fireman; but the sparks set fire to the awnings.

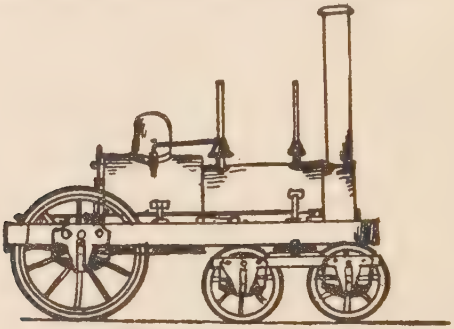
The status of the conductor was a grave question. Was he to be regarded as the captain of a platoon of troops? He was called "captain of the crew" and took his stand as lord of all he surveyed, either on the rear platform of the engine or the fore platform of the first passenger coach. Or was he to be a sort of gentleman treasurer for the directors? Reliable and commanding and dignified he must be; so the first conductors appeared officiating in plug hats with long frock coats and high choker collars. What the wind and the smoke did to that pompous costume can be guessed. It did not add to dignity. The conductor's salary was not far below that of the first presidents of the company. He drew $2.50 a day, where the president drew from $1,000 to $2,500 a year. Considering the difference in the buying power of the dollar, that pay was not so far below the $8 to $10 and $12 a day now in vogue. Then as now, it was considered that a man on whose quick good judgment the lives of the passengers and the good will of the public depended must be far above the average. Why the presidents' pay has ascended so far above the conductors' in our era hardly needs explanation. The president of a great rail corporation to-day commands an army of from fifty to a hundred thousand employees and decides matters of policy which may affect for good or evil from ten to twenty million people in the line's territory. The conductor of that era was provided with a big strong tin box to collect cash fares and with heavy cardboard tickets from point to point, which could be used over and over.

Stations, at first, there were none. They had to be built and as time went on became more comfortable than many a passenger's home, and in good centers really magnificent temples of traffic. Warehouses for freight, there were none. They, too, had to be built, and shippers could not understand why those warehouses could not be used free for an indefinite length of time. Whistles, there were none. The first conductors used big tin whistles. Bell ropes for quick signal, there were none. The conductors waved or shouted to the engine man.

Turnpike roads began with a toll gate. Rails began with a passenger rate; and the turnpikes were strong enough to force the rails to keep their rates pretty much even with the turnpike. That is why there was such an amazing difference in the rates — three cents and four cents a mile in the North where turnpikes were many and powerful; eight cents and ten cents a mile in the South where turnpikes were few. The rails were compelled to equip themselves at a far greater cost, and to sell a superior service at a lower toll. Even as late as 1848, many rails were not allowed by law to take freight traffic. It would have diminished revenues to turnpikes and farm teamsters.

Down to 1839, two candle lanterns were the maximum for a passenger coach. There were no wash rooms. There was no water supply. There was no heat. Urchins along the road earned pennies and dimes by selling hot bricks and hot stones to passengers for foot warmers. In both the directors' and train men's minds there was nervous terror at first that the train

wheels would not stay on the rails going uphill and downhill. The flanged wheel and the T rail were still to be worked out. The puff-puff of a big mountain engine girding up its steam power to climb a mountain and the prouder snort and switch of its tail engine as it rattled down a steep grade — which little boys and girls now sing in their nursery rhymes: "I think I can — I think I can — I think I can" — then, "I know I can — I know I can — I know I can" — had not yet been devised in many inventions.



First Bogie Locomotive

The four-wheeled "bogie" truck pivoted or swiveled on the main frames enabled the wheels readily to follow the curves of the track.

As to speed, it was as late as 1835 that a director burst into a meeting of his company operating a Boston and Worcester line, shouting triumphantly: "Well, here we are, friends — we came by rail almost forty-two miles in less than three hours."

Shippers of freight, where freight was permitted, packed their own cars and took their time about it. They could not understand why an empty waiting car was a loss to its owners, though they understood

perfectly that problem in simple arithmetic when, acting as teamsters, they charged for waits and going out or coming back empty to the stable.

Where rails were so desperate for funds that they had to go to the state for aid, the state provided that — no matter how long the private investor had to wait for his first dividend — if the dividend went above ten per cent, the surplus must go to the state. That was the first " recapture clause " in state laws on rails. Yet more, the state aiding the rail provided that within twenty to thirty years the state should have the right to buy out the rail at the state's valuation. Though the rail might for years put back all profits in improvements, several states — wise old Massachusetts among them — forbade stock dividends. One New England state, on giving charters for rails' right of way, enacted that the rail companies should be compelled to pay the owners' valuation no matter what that was. Was it any wonder that such charters fell stillborn from the legislatures and no rails were laid? The public would not buy stock in such ventures. From those very laws dates the complete ruin of many a little New England hamlet, where the water wheel of the mill gathered moss and the people moved away. The old burghers of the indignant hamlet complained that " the rail had gone round another way " and left them " ditched." It had to. And if you want to know why in so many of the links making up the Boston and Albany, for instance, or the Mohawk-Erie trail of the New York Central, there were curves and kinks that had later to be made

more approximate to an air line, you will find the reason in the foolish state laws or the still more fatuous opposition by the turnpikes and canals.

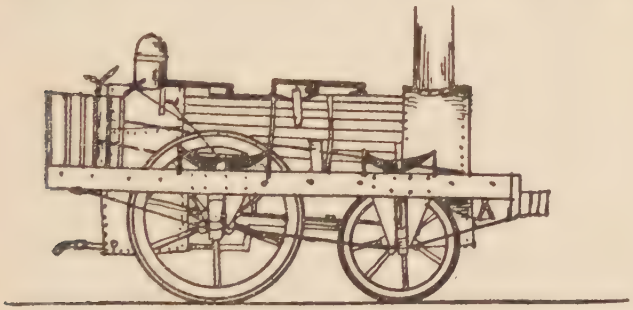
The West to-day is regarded as " the great trust buster " of combinations among rails. Contrariwise, back in the thirties and forties, it was the movement west that compelled the repeal of many foolish state laws. The Eastern manufacturing towns had to get their goods to the West, though the West in those days was only Ohio, Indiana, Illinois, Michigan, Wisconsin. When the little New England States found the manufacturers of Boston, New York, Philadelphia, Baltimore getting new markets, they repealed the foolish hampering laws; but in many cases it was too late and they never recovered their prestige and prosperity. New Hampshire, Vermont, Massachusetts, and Northern New York are dotted with such relics of their own tragic blunders.

Similar rivalries intruded in state feuds. New Jersey and Connecticut were jealous of New York. New Hampshire and Vermont were jealous of Massachusets. Maryland and Delaware and Virginia did not love Pennsylvania. Each seemed to think it could grab a bigger share of prosperity for itself by pulling its neighbor back a little, or lift itself by its own boot straps by giving a thrust of its boot-heel to its rising neighbor.

The lure of the West begins appropriately on the Baltimore and Ohio. The ultimate goal down to 1850 was the great Ohio and Mississippi Empire.

As told before, Philadelphia and Baltimore had

sent Allen and Strickland to report on and buy some English engines. These engines — the *Lion*, the *Delaware*, the *Hudson* — reached the United States in 1829. They were not successful. They were designed for heavy trucks, gravity coal carriers, and light frequent loads, whereas what America needed was an engine for light trucks, long hauls, and heavy loads. Allen invited the gaping sightseers to accompany him across a wobbly trestle; his invitation was not ac-



Planet Type.

In this light American type of engine the center of gravity was too high for safety at the curves.

cepted, though when they drove the *Lion* across the shaky trestle, the crowds split the welkin with applauding yells. The engines had cost only from $2,900 to $3,600 each. They would to-day hardly be usable to haul dump carts for a coal mine. But they had proved steam was the coming power; and Baltimore had visions of getting that Ohio traffic to shipside if workable engines could be devised; and the workable engines were devised by amateurs — amateurs, because steam had as yet no experts. The Baltimore

and Ohio got its charter by 1827; but it met the usual juggling between rival states over the charter. It wisely put its capital — five millions — high enough to extend right across to the Cumberlands. Citizens were to have the right to put private vehicles on the tracks, and tolls were fixed hidebound. When one cons over the restrictions tied round the Baltimore and Ohio's infant neck, it is a marvel the en-

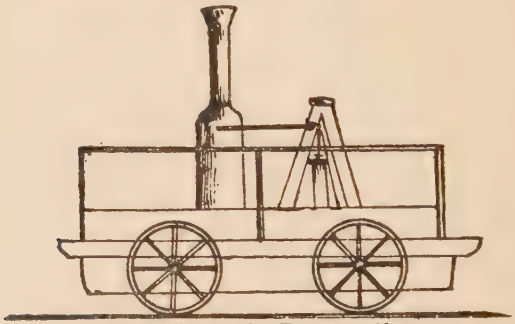
In the early development of the Baltimore and Ohio it was sometimes necessary to substitute horse-power for steam.

thusiasts behind the project, even with the blind faith of little children, ever had the courage to go on. Two of the turnpike companies were so strong they got out court injunctions forbidding the Baltimore and Ohio to cross their territory. Of course, this holdup was shortly overcome by hooking up the turnpike and canal concerns with the new rail venture. Through the suburbs of towns where an engine was to be used in place of a horse, "*it would not be prudent to establish a higher velocity than the walk of a horse at*

two-and-a-half miles per hour . . . to and into a great emporium such as the city is destined to become." Ground was first broken on July 4, 1828, and Charles Carroll of Carrollton — then ninety years old — laid the first corner stone, with these prophetic words: "*I consider this among the most important acts of my life; second only to signing the Declaration of Independence, if even second to that.*" To the credit of Baltimore people, twenty-two thousand citizens subscribed for the stock privately issued. The subscriptions were three times greater than the offerings. Following England's example, a roadbed was laid to last long as an ancient Roman army highway. Strap iron was laid on the sleepers, spikes four inches long were driven in ties, and when a test train was run with horse power, it was proved the wheels would stay on the tracks at fifteen miles an hour.

Now, Peter Cooper was a landowner near Baltimore. If a train would stick on rails with horse power, thought he, why not with steam power? The engine he had built became famous as the *Tom Thumb*. The race between the Gray Horse and the *Tom Thumb* on parallel tracks has gone down in history as renowned as Christopher Columbus' discovery of America. *Tom Thumb* was constructed in 1829, no bigger than a hand car, with a little upright boiler like a kitchen bath heater, and the greatest race in American history was held on August 28, 1830. Here is the account of one passenger in the single coach attached:

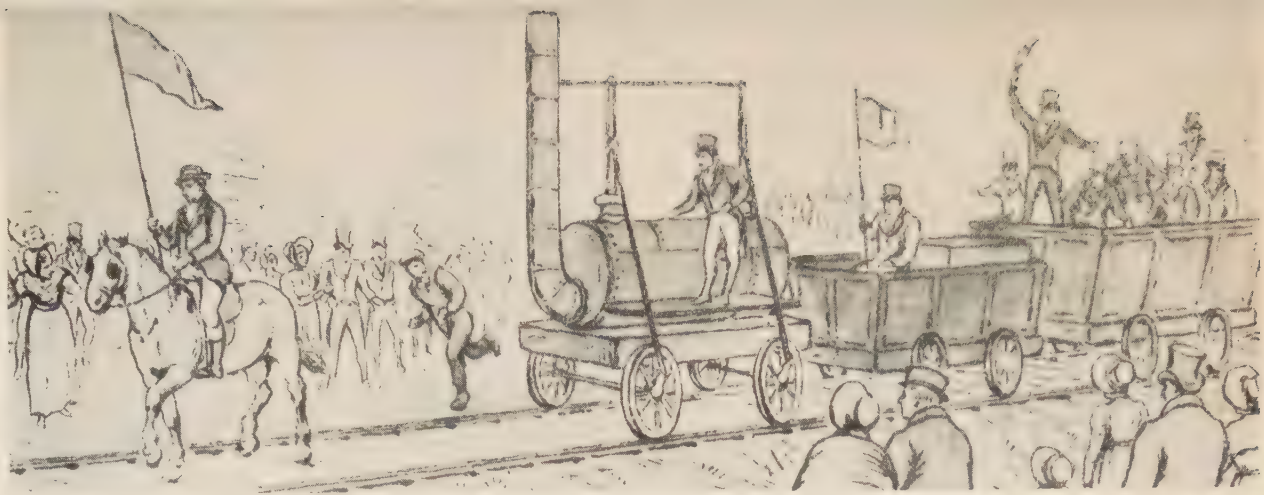
" The trip was most interesting. The curves were passed without difficulty, at a speed of fifteen miles an hour. The grades were ascended with comparative ease. The day was fine, the company in the highest spirits, and some excited gentlemen of the party pulled out memorandum books, and when at the highest speed, which was eighteen miles an hour, wrote their names and some connected sentences, to prove that even at that great velocity it was possible to do so. The return trip from the Mills, a distance of 13 miles, was made in fifty-seven minutes.



Peter Cooper's Locomotive.

The famous *Tom Thumb* of 1829, the first steam locomotive built in America, was about the size of a modern hand car.

" The triumph of this *Tom Thumb* engine was not altogether without a drawback. The great stage proprietors of the day were Stockton and Stokes; and on that occasion a gallant gray of great beauty and power, was driven by them from town, attached to another car on the second track — for the company had begun by making two tracks to the Mills — and met the engine at the Relay House on its way back. From this point it was determined to have a race home; and, the start being even, away went horse



The opening of the Stockton and Darlington Line on September 27, 1825 was "the most famous day in rail history." Stephenson's train weighed nearly ninety tons and attained the speed of eight miles an hour.

RAILROAD DEPOT AT PHILADELPHIA.

It was more than a decade after the race of the *Tom Thumb* and the gray mare that rails were permitted to enter towns. This old print shows the first railroad station at Philadelphia.

The *York*, built by Phineas David, won a prize of $4000 offered by the Baltimore and Ohio Railroad in 1831 for the best locomotive.

and engine, the snort of the one and the puff of the other keeping time and time.

" At first the Gray had the best of it; for his steam would be applied to the greatest advantage on the instant, while the engine had to wait until the rotation of the wheels set the blower to work. The horse was perhaps a quarter of a mile ahead, when the safety-valve of the engine lifted, and the thin blue vapor issuing from it showed an excess of steam. The blower whistled, the steam blew off in vapory clouds, the pace increased, the passengers shouted, the engine gained on the horse, soon it passed him. The lash was plied — the race was neck and neck, nose and nose. Then the engine passed the horse, and a great hurrah hailed the victory. But it was not repeated; for just at this time, when the gray master was about giving up, the band which drove the pulley which moved the blower, slipped from the drum. The safety-valve ceased to scream, and the engine, for want of breath, began to wheeze and pant.

" In vain, Mr. Cooper, who was his own engineer and fireman, lacerated his hands in attempting to replace the band upon the wheel. In vain, he tried to urge the fire with light wood. The horse gained on the machine, and passed it. Although the band was presently replaced, and steam again did its best, the horse was too far ahead to be overtaken, and came in the winner of the race. But the real victory was with Mr. Cooper, notwithstanding. He had held fast to the faith that was in him, and had demonstrated its truth beyond peradventure."

Baltimore enthusiasm was not quenched. Sidings, switching devices, turnstiles or tables for engines — came in quick succession; and plans were under way

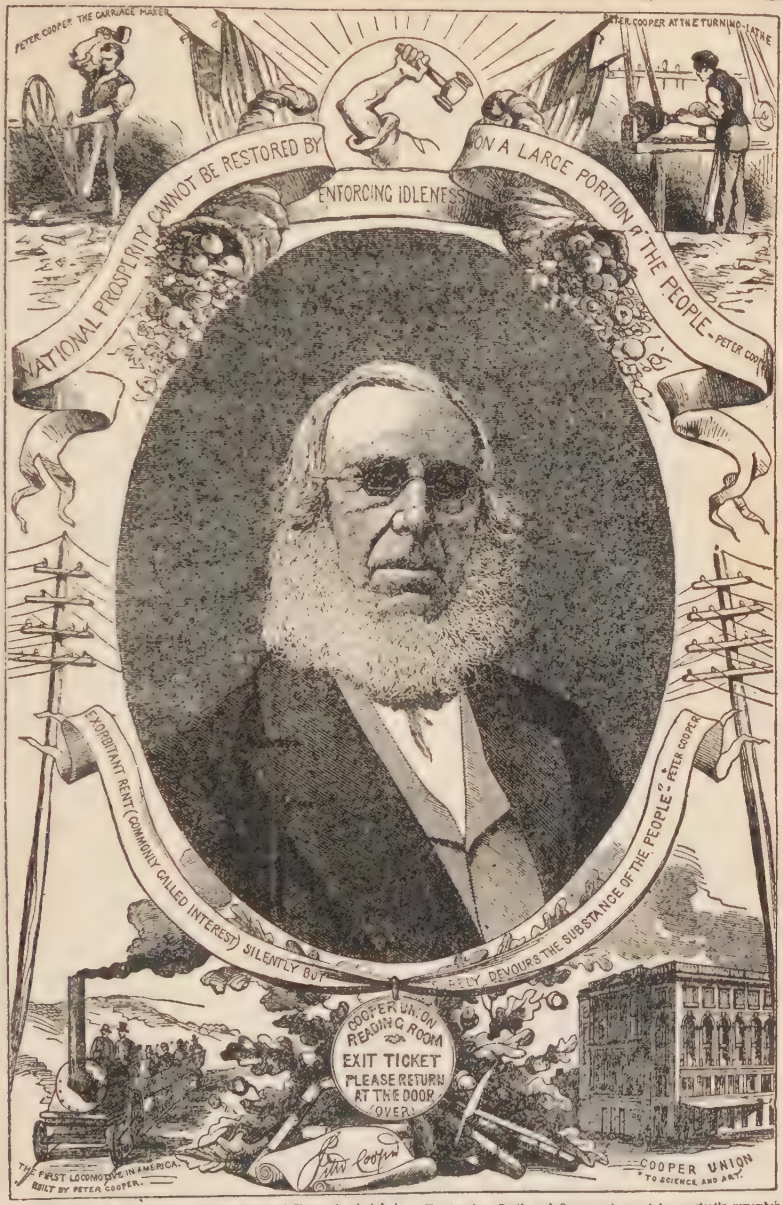
for extensions to Washington by 1833. A train of seventeen cars did reach the Federal capital by 1835, in two hours and twenty minutes. On that train traveled relatives of the great men who had urged Gallatin's early survey of transportation in America, a Washington, Adams, a Jefferson, Madison. With that record, mails by horse post and stagecoach transferred to the Baltimore and Ohio. Teamsters retaliated by soaking the railroad laborers with bad whisky, beating up firemen on stalled trains, and shooting train crews from ambush along the tracks. By 1837, the Baltimore and Ohio had reached within sight of the Cumberlands, but of the first big capital *not a penny remained in the treasury*. Laborers' wages were paid in scrip to be redeemed in cash or goods in Baltimore; and bonds guaranteed by the city and state to raise more money could not be sold at a discount. To lash up flagging faith in the rails as an investment, local newspapers compared " the sparks of the flaming Mercury " to " a volcano creating new continents," the lighted coach windows to " torches to new empire," the speed to " swimming in space " — but all in vain. With the hard times that culminated in the panic of 1837, people simply had not the money to invest and banks did not dare advance loans of clients' money without at least a prospect of profit.

At this juncture came some very extraordinary factors in American railway building. Meetings held in churches — yes, opened with solemn prayer by a Quaker in an Episcopal church — failed to raise money; but they did reëstablish waning and wobbling

INDEPENDENT GREENBACK PARTY.

Headquarters, Union Square (cor. 14th Street and 4th Ave.) New York.

HON. PETER COOPER, of New York, Candidate for the Presidency.


PETER COOPER THE CARRIAGE MAKER
PETER COOPER AT THE TURNING-LATHE
NATIONAL PROSPERITY CANNOT BE RESTORED BY
ENFORCING IDLENESS
ON A LARGE PORTION OF THE PEOPLE.—PETER COOPER
EXORBITANT RENT (COMMONLY CALLED INTEREST) SILENTLY BUT
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COOPER UNION READING ROOM
EXIT TICKET
PLEASE RETURN AT THE DOOR
OVER
THE FIRST LOCOMOTIVE IN AMERICA. BUILT BY PETER COOPER.
COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART.

HON. SAMUEL F. CARY, of Ohio, Candidate for the Vice-Presidency.

I am convinced that when a true American System of Finance is adopted which shall put all that circulates as Money entirely and exclusively under the Control of the Government, MAKING IT RECEIVABLE FOR ALL DUTIES AND DEBTS, Employment for all the Working Classes, and Prosperity for the whole Country will be the natural and permanent result.—PETER COOPER.

The American People and Government cannot too constantly remember that it is utterly impossible for us as a Nation to buy anything cheap from foreign countries *that must be bought at the expense of leaving our own paid Raw Materials unused, and our own Labor unemployed.*—PETER COOPER.

[ENGRAVED EXPRESSLY FOR THE "IRISH WORLD."—RE-PRINTED BY THE NEW YORK MERCANTILE JOURNAL CO., 250 PEARL STREET, NEW YORK.]

Nearly half a century after he built America's first steam locomotive, Peter Cooper became the candidate for president of the Independent Greenback Party in 1876.

faith in steam as a paying power. Though the state and the city added six millions to the working capital to complete the road to the Ohio, for which the road had to pay six per cent, the fact that 1836 was a hard winter, and ice on the rails stalled the engines so that horses had again to be used, jolted that faint faith. Passengers decreased almost twenty per cent.

Then the desperate directors adopted the new expedient of paying contractors in those non-sellable bonds. By 1841, eleven years after the race with the horse, the directors did succeed in paying the restive shareholders two per cent. Within one year of that unwise gesture of a success not yet assured, it was actually proposed to foreclose the mortgages held by both state and city against the turnpikes and canals, which had been absorbed by the Baltimore and Ohio. One good came out of all these ills, like air cleared by a thunderstorm. Many of the foolish restricting laws were repealed. The rails could enter towns. Freight was permitted. In fact, it was figured that coal freight might bring returns up to pay costs.

Then came the greatest help of all. In England, where population was dense and building easy, railroads had been a colossal success. Baring Brothers, the great English banking house, began taking Maryland rail bonds. This was in 1848. The returns financed the Baltimore and Ohio through the most expensive section of the Cumberlands. Construction, without equipment, had now cost seven and a half millions — absorbing all the first capital and a great deal of the bond returns. The name Baring Brothers

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Written specially for the occasion, this music was played at the ceremony held when ground was first broken for the Baltimore and Ohio Railroad. Twenty-two thousand citizens of Baltimore subscribed to the stock privately issued.

should be held in mind; for the crash of the Barings brought one of the most terrible panics America ever knew.

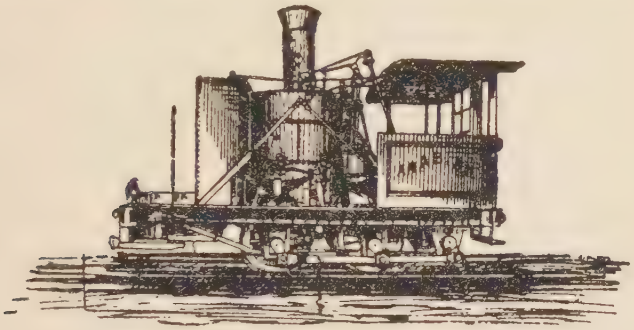
Let us pause here to consider several of the vital factors that had entered into American rail building. They were desperate measures and last resorts to avoid bankruptcy and total loss; but they opened the sluice gates to terrible evils that wrecked many a railroad during the next twenty years; and they have wrecked many a railroad in our own day.

Laborers' wages were paid in scrip to be redeemed in cash or goods at Baltimore banks and stores. If merchants had to accept doubtful scrip, you may depend on it they charged a price to cover the risk; for many of them had to redeem that scrip by taking shares in the company. That swelled the capital of the company.

Bonds were guaranteed, or backed, by city and state. No matter to what low price those bonds fell — and they fell far in panics — they demanded payment of full face value and interest, or the mortgage could be foreclosed. Then, low-priced, speculators could buy them and gain control of the road.

Contractors began taking payment in these nonsellable bonds. Is it human nature to believe that contractors, having to pay cash to their laborers and to wait years to realize cash on their bonds, would not charge the maximum for work to cover their risk and the delay in realizing cash? The next evil followed fast as a toboggan going downhill of its own momentum. To avoid having contractors "skin" the

roads by high charges or flimsy work, many directors became holders in these contracting companies—openly at first, secretly as the evils grew—and the profits to the contractors having first claim on the roads often far exceeded the profits to the shareholders; indeed, often prevented the shareholders getting any profits; and converted profits to dead losses. All that prevented the Baltimore and Ohio



Early B. & O. Locomotive.

The crudities of the early locomotive were only one of the many obstacles to the successful development of the railroads.

from falling an easy prey to these dangers was the magnificent integrity of its first founders and first directors. Many were Quakers whose "thee" and "thou" dot the minutes of the directors' meetings.

Great foreign financiers now became owners and directors of American enterprises. American rails could not have been built at the terrific and needed speed without such foreign loans, from 1848 to 1898. English investors were satisfied with three and four per cent dividends. Americans demanded six to

twelve per cent. In fact, many of the bonds so bought by foreigners — big banking houses, religious orders, insurance companies, little investors who took only $1,000 at a time — were not paid off by America until the World War.

But there were perils in this, both to the foreigner and to the American venture.

The distant investor cannot know local conditions. He may be frisked out of his ownership by repudiation of pledges by state, city, county. This happened in the South after the Civil War and accounted for much of the foreigner's sympathy with the South in that War. He knew that if the South won he stood a better chance to get his money back. If it did not, he stood to lose; and many did lose when the South collapsed.

Absentee ownership also gave rascals in the financial game, living in America, a chance " to wreck " what were called English or Dutch or French owned American roads. They could let the roads " run down at heel " so that the public would not patronize them. They could bar them from this, that, and the other terminal so that revenues fell off and the road had to be sold under foreclosure of mortgage at a song; but this comes into the later story of the great Baring Brothers crash.

Chapter VII

Boston Steps With Dignity Into The Rail Arena. 1830–1850

RECALL that the serious old Boston *Transcript* had warned the wicked world that the use of steam with its train of coaches, its "soft effeminate cushions causing easement to body and legs," would rob "passengers of manliness" and "death of half its terrors."

Now apprehensions more mundane roused Boston from smug lethargy. It was a lifting kick. When profits are on your side of the ledger, it is easy to be unctuous to one's own deficiencies and a flaming fire to the other fellow's. In an earlier day, when Boston was not quite sure whether tea was to be condemned by "the medicos," as "dangerous to morals," though her ships going to the North Pacific Coast did not stick at cargoes of opium from China for furs, Boston fired "the shot heard round the world" over a cargo of what? — Tea! So now Boston, taking a jump to the West, stirred up the slow-going Dutch of Manhattan Island and the canny Quaker of Philadelphia as to the direction in which the flag of steam was leading mighty forces — West. Boston had been the first to use a sort of dump car on rails with horse power and gravity up Bunker Hill. Then she lagged. Why? Because her schooners and whalers, slim of body as a fish and cloudy with great sail, gave her a false sense of security. She seemed to have leadership in ocean commerce. Weren't the New Bedford and Salem men sending ships to every port in the world? Didn't her

ships, both sail and steam, hold most of the coastal traffic from New England to Europe? More: didn't they handle and hold most of the outgoing and incoming traffic of Nova Scotia and Quebec? So long as she got the traffic, what cared Boston that her ships were building up Quebec and draining New York?

Then something struck Boston's prosperity a smashing blow. Somehow, when she staggered she didn't rally.

The War of 1812 blockaded Boston harbor. Her shipping fell to almost nothing. When peace came, though her clippers of the thirties and forties were famed the world over as swiftest of keel, they were not bringing her such great returns as the flood of traffic to and from the Ohio, whither pioneers were trekking in thousands. Round the world to the Pacific Coast was a long way west — six months generally; and here was steam from Baltimore tapping another West — a vaster West — all the way from the Ohio to the Mississippi and the Missouri. Michigan, Wisconsin, Ohio, Indiana, Illinois — the new territories — were coming into the Union like a fast multiplying family, with demands for every thing Boston had to sell. Real estate values were falling off in Boston as in New York. Merchants complained business was slack. Some docks were rotting from idleness. How about an air line to that New West?

Canals at Boston had been blasting in their disappointment. They did not pay. They could not. They were short. They froze up five months of the year.

When Boston began to dream of rails westward, her first idea of West was Albany; but her patriotic citizens would not subscribe for stock in steam rails. Why? Many charters had been granted in links of ten to twenty miles up to 1830. Why would Boston citizens not buy stock? Because profits were limited to ten per cent. All above ten per cent had to go to the State of Massachusetts, or tariff had to be lowered. Then with the Puritan repulsion to any kind of monopoly, nearly all charters provided that at the end of twenty or thirty years, the state could take over the rails at *its own* valuation. No matter how long investors might have to wait for any dividends — and some never received any — stock dividends were forbidden; and rail tracks were to be for free use by other vehicles. Who could be sure in a new venture that at the end of twenty or thirty years the investors would get back a dime for pooling savings in a sheer gamble?

Boston took a look at the map just as she had when she sent Gray around the world in 1789 and 1792. To the south were Connecticut and Rhode Island stalled from want of highways. New York's boasted route north and her canal route west up the Mohawk did not help Rhode Island and Connecticut one jot. Here to the north was Maine also stalled. Here to the west were New Hampshire and Vermont worse than stalled — sending what should come to Boston down to the St. Lawrence; and westward — ah — westward, here was route shorter in air line to the new inland territories than up one leg of a square —

the Hudson — and then along the other side up the Mohawk.

It is unfortunate for us that Boston now proceeded so secretly about the business of capturing Western traffic that we have few of the spectacular features of railroad growth which mark the same expansions from New York and Philadelphia. Cautious as always, the Puritan business man began his march westward one step at a time — by building links; then, as one link paid, hitching on another; then, as that air line round hills proved more a series of curves than an air line, where one link didn't and couldn't pay, putting that weak link between two strong links, and making the main chain pay for the weak loops. There is no use giving the numerous names of the links. They only confuse the mind. They became what we know to-day as the Boston-Albany and New Haven-Hartford. They illustrate then as now that consolidation of the weaklings with the strong was the remedy that forced big " through lines " before men's vision had grasped that big " through lines " were to be the steel girders to belt the continent. They also brought the rate snarls that entangle and confuse to this day. Freight rates didn't grow like Topsy. Neither were they made by rail directors. Nor could they be compelled by state laws. Those early state laws of Massachusetts charters had to be repealed because people would buy neither stock nor bonds without at least a prospect of profit. *What, then, created rates?* The individual needs of each line, as circumstances forced or new conditions arose. *That is all.* Investors demanded some profit. People along sparsely settled lines

needed steam rails quite as sorely as people in thickly settled sections.

One of the first theories that had to be given up was that railways were free common highways for anyone who chose to use them. Steam rails were not a common road in the sense of the wagon road. They were the property of the men who put up the cash to build them, and were open to the public who paid the toll for the service.

Of course, Massachusetts, like all the other amateur builders in the era from 1830 to 1846, had to learn by mistakes. Her next mistake was to build for eternity. She laid granite ties, only to find that such hard heavy roadbed in the bouncing of coaches, which as yet had no springs, tore coaches and engines to pieces as they rattled round curves; so these were gradually changed to chestnut and hemlock sleepers. Massachusetts was one of the first states to use heavier engines; but with Puritan persistence, she clung to different gauges. There would be one link six feet across from wheel to wheel, another narrower, another wider; and as the loops lined up in one system, the changing of these gauges to the present standard gauge of four feet eight and one-half inches, and the changing of the wheel width of engines and cars, enormously increased the cost of building the lines extending year by year from Boston to Albany, and via Connecticut from Boston to New York. Then, of course, Massachusetts rails had to keep charges more or less level with stagecoach and canal, at that time three to four cents a mile.

When we read that the little engines of eleven tons,

costing seven thousand dollars — or twice as much as the Baltimore and Ohio little steam puffers — were regarded as so extravagantly expensive that people had a doubt whether they could earn their cost and keep, we get a faint idea of the progress made in a century. There are lines to-day that transport the entire crops of a county's farms behind one Iron Horse.

Massachusetts lines learned that rates must differ in different territory and must differ in different seasons. It costs more to operate steam in winter than in summer; but in winter there was no competition of stages and rivers and canals. Should the rates be put up for winter, or put down for summer? One would give a great deal to have the minutes on that moot point, the opinions of the level-headed burghers behind the doors closed to the public. Unfortunately no such records exist. All we have is the decision. They lowered rates for the summer. They lowered rates for excursions. They lowered rates to two cents a mile to attract what we now call commuters; but they couldn't lower rates proportionately where there was neither excursionists nor commuters and the link line was not paying. This was between 1839 and 1843. Traffic doubled and then trebled. The burghers were justified. By 1843 — look at the fact, the figures can be found in any old state annals — the Boston to Albany line was getting more traffic than the combined rivers and canals in the United States.

At the same time, Massachusetts was pushing out lateral feeders up to Portland, Maine, through the

hills of New Hampshire, north through Vermont to catch that traffic going to Montreal; yes, down through the Berkshires along the Connecticut border to capture what was going to New York by way of the Hudson. Boston had been hit hardest by the War of 1812. She was hurt least by the panic of 1837. Why? Largely because her rails were bringing in dividends and there was a growth of great factories to buy raw produce — wool, leather, hides — and to sell manufactured and imported articles in return to the Back Country. For a century, Boston benefited from this policy. New Hampshire was at first very unfriendly to rails. State law compelled rails to pay farmers their own value for right of way. That law killed all rail building in New Hampshire from 1830 to 1844, when the state, seeing Vermont shoot ahead in the growth of little rail and factory centers, repealed the foolish, impossible law. Boston by 1845 was actually getting Canada's half-yearly traffic when ice closed her one great natural highway up and down the St. Lawrence. This is one of the best examples of how rails have to ignore state, national, and political barriers. By 1850, New England had almost three thousand miles of steam rails radiating from Boston. Boston rails had seventy millions of private capital invested in steam; but if you divide that by the number of miles, you get a very inadequate idea as to the cost of each mile westward. There were those mistakes to be corrected. For instance, the link from Boston to Lowell in 1831 to 1837 cost easily $56,000 a mile. By the time the mistakes had

been corrected, it had cost $88,000 a mile, colossal for that day as it would be for our day. Again pause to realize the progress of a hundred years. There are in the United States, in 1929, almost six hundred thousand miles of motor highways, of which almost eighty thousand miles are paved flat as a floor. The common highway is built by taxing all citizens. The steel road is built by taxing its users and investors; and yet all the states of the Union are now spending a billion dollars a year on building public roads. This illustrates the immensity of our expansion in vision and effort in one brief century.

If you will look at a map, you will see broadly how the links were added " here a line and there a line, here a little and there a little, precept upon precept, line upon line," making one mistake one year, profiting by it the next year — and pressing, ever pressing forward in the divine urge westward. I call it a Divine Urge, because there is no other possible explanation of why men with one pay line on their hands should have annexed a non-pay line and then gone on with " the blind faith of little children." You may say the West was the siren that lured with promise of profits. It was, but it also lured with the certainty of immediate losses from enormous outlay and no profits for years. Yet the race westward continued.

There was the first link from Boston to Newton; then from Newton to Worcester, a long jump; then from Worcester to Springfield in a series of jumps; then from Springfield to Pittsfield, and Pittsfield to Chatham, and Chatham to Albany; and no sooner

was Albany touched than longing eyes were cast towards Buffalo.

At this spot New York awakened as from a fool's paradise.

Meanwhile, did it pay? How were stocks quoted? What were the dividends?

Certainly nothing to excite investors. The highest in this era is 196 for the Boston to Lowell link, and the next highest, 112, from Lowell to Nashua; the lowest from Vermont up to Canada, 21; these in good years. In bad years, the Boston to Lowell fell to 91, the Lowell to Nashua, 107; the Vermont up to Canada, to 12. Par was $100. A lot of investors must have lost cash and faith in steam rails. As to dividends — six, five, four, three per cent. Of the Masachusetts rails and branches, eleven had never paid a dividend up to 1854. There were about twenty-four links and laterals. New Hampshire, Vermont and the back country of Connecticut were the losing links. Some of those links are still losers, and the Interstate Commerce Commission is gradually ordering them off the map as the motor highway supplants their use.

Summarize the lessons Massachusetts rails had learned in a quarter century:

The free common highway theory had to be given up. The rail is a highway for common use, but it is owned by its investors and is not free.

You can back a rail with a state charter and give it the right (not guarantee) to earn ten per cent and add to that a monopoly over its own territory. The investor won't buy unless he is to own the property

in which he buys a share; and he won't buy unless he sees a chance of profit.

The idea of each link having a different gauge was both expensive and futile. There must be a standard width for all rails.

You can't make rates by law. Rates are made by different seasons, different territory, different character of travel, different bulk and weight of freight — factors that shift and change as seasons change, as population increases and decreases along the lines, as the weak must be absorbed for help by the strong; and if the weak are such complete parasites that they can neither become strong nor feed the strong, they must die. Law may prevent skullduggery and rascality in favoritism, but it cannot create rates. Rates are forced by necessity. It cost so much, for example, to run a train of freight cars. Was the freight to be charged by bulk, or weight, or service? Take as example bulky light hats, bulky heavy timber or stones, very valuable but very lightweight silks and teas, very average fruits but demanding speed and ice and heat according to the season — not so simple this freight charge business after all, is it? It is about the most complex, complicated thing inexperienced men ever tackled; and shifting with every season and every territory. Freight charges must be flexible as necessity on the spot demands. Take one modern example of that. There had been a great drought in one area of the West. Stock was starving for need of hay. It was costing ranchers seventy-five dollars a ton and they hadn't a cent to pay the freight charges on de-

livery. Just over a ridge of the mountains, there had been such an abundance of rains and hay that the farmers couldn't sell at twenty dollars a ton. They were glad to let it go at eight. Now, freights under modern Interstate Commerce Commission regulations are about as flexible to sudden needs as the laws of the Medes and Persians. The agent having more sense than fear of losing his job shipped that hay in quickly, at a rate below the regulation tariff. All that saved the agent from dismissal and the line from a fine was the fact the railroad went into a receivership and his insignificant sin was forgotten in the larger issue.

Massachusetts had learned that lower rates, fair in returns to the investor, can bring double and triple returns by creating prosperity along the lines.

All this may be very dull, but it is essential in order to understand how the steam rail became as much of an empire builder westward as had the Roman Empire. Those old wise-headed Boston burghers, of whose discussions and solemn arguments pro and con we have only the scantest records, did as much to open and hold and make livable the West, as Gray did to discover it, or Jefferson to buy it, or Lewis and Clark to explore it — and not a dozen of their names have come down to history. Hardly a figure stands out. Good old Puritans, with conscience on a hair trigger but feet planted squarely on the ground, they seemed to have followed the Biblical instruction that in " the multitude of counsellors is safety " and " he that hath knowledge spareth his words." It was really

the consensus of good sense and vision and daring that for a quarter of a century gave Boston the leadership in steam rails; and from that leadership came the capital and some of the best engineers, who from 1856 built Western rails.

AUTHOR'S NOTE

The New York Central, who have a nine hundred ninety-nine year lease on the B. & A., tell me there is not a single name left from this era.

Chapter VIII

How New York Lagged And How Order Came Out Of Chaos. 1826–1850

WHEN New York State had issued as many as forty-nine rail charters by the early thirties, and fifty-eight by the early forties, why had she lagged in adopting steam?

There were a lot of reasons. Most of them reached down to the pocketbook.

She was depending on the Hudson north and south, on the crudely built Erie Canal and Mohawk River east and west; but both iced during the winter. Even with steam power both were very slow on open water. Down the Erie Canal, an average of four miles an hour was fast; up the Erie Canal, an average of two miles an hour was not unusual. Then there were the delays of frequent stops both ways. Also, water will not flow up hill. The best canal on earth must more or less follow the windings of nature's water courses. The rail can follow what is closer to an air line.

When the canals were blocked in winter, the stagecoaches resumed for passengers and the farmers' wagons for freight; and the stagecoach stocks were selling at 200.

It seems impossible to credit the next obstruction. Every tavern wanted to retain passengers for the night at its own local point. For instance, what was deemed a hopeless barrier lay between Albany and Schenectady. A hump of land rose almost two hundred feet on the Hudson side. As the Boston and Albany came pushing westward, the shrewd Dutch-

men in Albany chuckled. That would make Albany " the net " to catch all the flies; but steam on rails has a way of doing things quite unexpected. Those shrewd Dutchmen suddenly wakened pulling their whiskers. That Erie Canal on which they had pinned their hopes was feeding traffic direct into Boston. I don't suppose they cared a particle about hurting New York; but they did care about not getting so much traffic up the Hudson from New York. It was really what one writer describes as " the call of the West " that alarmed Albany. Traffic breaks through all man-made laws for the shortest distance between two points.

When the advocates of steam suggested getting over that hump between Albany and Schenectady by either a gravity road or a series of planes, the Dutchmen didn't believe it could be done because they didn't want it done. This explains why so many charters were granted for rails between 1830 and 1840, but all had some clause tacked on that made it impossible to get cash subscriptions to the stock. If the private enthusiasts for steam would not put up cash, why should the state?

One law prohibited the entrance of a steam-driven vehicle within the city limits of Albany and Buffalo. Not safe — was the reason given. Taverns, teamsters, coach lines, canals were the real reason. Right of way, fences, grades, ballast, ties, tracks — were laid down in other charters. This was sheer blindness to the plain fact that building must be determined by two local factors — what is found best by experience for

each particular area; and what is found best can only be provided as subscriptions to the stock and revenues from the road come in. If Albany could hold all passengers for a night, why not Utica? So Utica, too, was hostile to a through line. If Albany with a population of thirty thousand could become a great travel center, why couldn't Utica with a population of only six thousand? All the towns close to the canal wanted the rails prohibited from carrying freight. All the towns off the canal wanted the rails to carry freight. But the canals were prepared to die hard, if they had to die. They cut rates to the bone, and canals had state support; so the first rails carrying passengers had to charge the same rates — about three cents a mile. To this they did not object; for they knew they could make up deficiencies in canal travel by speed and frequent trains; but when to this handicap was added — as it was in several charters — that anything earned over ten per cent was to be paid in a rebate to the canal, the buyers of stocks became gunshy. Then when certain short rails were allowed to carry freight, they could carry it only when the canal was not running. As if these laws were not sufficient strangulation to kill by regulation the baby rails, there was added in other charters the right, at the end of five, of ten, of twenty years, for the state to take over the rails at exactly the cost. What was to be given the investor, who had waited all these years for some returns, was left in the air, too vague for any man in his senses to risk savings.

Was it any wonder the one hundred rail charters

fell dead? Was it any wonder New York City, a metropolis of two hundred thousand souls, began to wonder whether Albany with thirty thousand had any right to block progress and divert the profits from Western trade to Boston? Was it any wonder New York City was the first to take up seriously the business of overcoming that hump between the Hudson and the Mohawk from Albany to Schenectady? Manhattan Island had cost the Dutch about twenty-four dollars, or six acres for one cent. Was Manhattan going to see Albany and Boston and Baltimore capture all Western trade? It was not; and here comes into the story a new type of man in New York rail building, — the empire builders with vision — men who could see beyond their own noses; not unselfish, in fact, utterly self-seeking, but realizing you can't build up a great country by permitting one little section to grab all the advantages — such names as the Catlins, merchant bankers, John Jacob Astor, aging and infirm in health but alive to what the West might mean to New York, the Duanes, the Jays, the Fish family, the Dominicks, the Griswolds, the Devereaux', the Benedicts, the Cornings, the Marvins, the Van Andas, the Delafields, the Schermerhorns, the Lathrops, the Whitehouses, the Clarkes, the Goelets, the Roosevelts, the Hammersleys, the Fargo family, and others whose names have passed into oblivion except on little street-corner signs in Lower New York. Nor is it surprising how few purely Dutch names are in this list. The Dutch were pledged to Albany. The rail support came from the merchant-banker class in New York

City and such Western New York cities as Binghampton, Schenectady, Rochester, Utica, Syracuse — old colonial stock, whose ancestry had pressed up the Mohawk when every mile forward cost either their own life or an Iroquois'.

And it is perfectly natural the first big push for a railroad to overcome that hump between the Hudson and the Mohawk came from an English landowner in Upper New York. The Englishman knew how rails were succeeding in England and he was free from all the prejudices of the Dutch, who, coming from a land of canals, just as naturally pledged their faith to canals.

George Featherstonhaugh was a rich landowner of Schenectady County. He had been the author of that advertisement in 1825 for a rail charter, when the cost of the insertion in the press was " to be $1.56 " if it succeeded, " nothing " if it didn't. The road was to be the Hudson and Mohawk. Its capital was the modest sum of three hundred thousand dollars. Only three dollars down was to be paid by subscribers and the rest as capital was called up to one hundred dollars par. Catlin, the New York banker, was to receive the subscriptions. The law made the shareholders personally liable for all debts and provided that within five years the state might take over the whole concern with certain repayments to investors less all revenues they had received. If successful, the investors might lose all benefits; if a failure, they could gulp down their losses. Of course, such a charter had to be amended, but in the meantime Featherston-

haugh, with his wife who was a Duane, went to England at his own expense to study steam on rails. "Only seventeen days crossing the Atlantic," he wrote enthusiastically. So three years passed. The directors — Van Rensselaer, Featherstonhaugh, Fish, Astor, Catlin, Jay, Duane — met on his return at the old Bank Coffee House. Astor was too ill to be active; but it was figured the little road from the Hudson to the Mohawk — fifteen miles — would cost from two hundred seventy-five to three hundred forty-three thousand dollars; so it was self-evident the capital of three hundred thousand dollars would have to be increased to five hundred thousand dollars. This sent such a chill down Van Rensselaer's spine that when the first three dollar assessment was levied he began to back away. Many other subscribers followed his example and put up only one dollar of the three dollars called. Then, three members of Featherstonhaugh's family dying within three years and his mansion being destroyed by fire, he had to move to Philadelphia; with his moving, the spirit of enthusiasm departed from the Hudson and Mohawk. Surveys went on all through 1829. Mr. Jay chilled so that he resigned. It took until 1831 to call in all the assessments up to par. It must have been like pulling teeth, for they came in fifteen different desperation calls. Albany and Schenectady had gone cold. More than five thousand of the original shares had changed hands; but the New York crowd never let that stock sag. It had dropped to 30 in 1831, but marched up to 171 within the same year and later to 196. New York

made much the same mistake as Massachusetts — too heavy a roadbed. Iron for the strap rails was brought from England; and that added to the cost. A path was left for horses in case steam failed. This gives a fair idea of the faint faith in steam as a power. When the final demonstration was held — the *De Witt Clinton* engine drew three coaches, a horse drew seven coaches; but, unlike the Baltimore and Ohio race, steam won. The engine made the trip in forty-six minutes; the horse in seventy-five. Down grade back, the engine made the race in thirty-eight minutes, the horse in sixty-eight; but for that winter of 1831–32 the engines were taken off and horses used. The little *De Witt Clinton,* which had been built in a foundry in New York, can be seen as a curiosity in the Grand Central Terminal. It would be laughable if it were not pathetic — hardly seven thousand pounds in weight, eleven and a half feet long, with four wheels, a horizontal boiler, and a smokestack like a mill chimney. The tender came behind with barrels for water and space for wood, and an awning above to keep the trail of sparks from burning the wood. On each passenger car sat a conductor like the whip of a coach, and the directors inside wore such tall plugs to dignify the occasion that every jolt bounced both the passengers and their hats to the low ceiling. It was so low, one could not stand erect without a crack on the crown. On that occasion — and many subsequent ones — a rail fence was purloined and split up and bound to the three-link chain coupling to prevent one car telescoping another down

THE FIRST LOCOMOTIVE AND TRAIN OF PASSENGER-CARS EVER RUN IN THE STATE OF NEW YORK

The American Locomotive "De Witt Clinton," Mr. David Matthew, Engineer.

The diminutive *De Witt Clinton,* which made its maiden trip in 1831, was only eleven and a half feet long and scarcely seven thousand pounds in weight.

grade. Anyway, the *De Witt Clinton* and its brother engines were doctored up that winter so that the next year they could repeat the astonishing feat of thirty miles an hour. The *De Witt* was called "a beautiful light race horse" compared to its poor "elephantic John Bull," brought from England and early relegated to the junk heap. Henceforth, the Hudson and Mohawk built their own engines at home. By 1840, engines were costing round seven thousand dollars.

The John Bull, 1831.

"The elephantic *John Bull*" was imported from England, but it proved to be too heavy for American tracks. It shows the use of combined upright and horizontal boilers.

It was necessary to assess the investor twenty dollars a share to buy out the old turnpike; and one hundred fifty thousand dollars of new stock had to be sold at auction in New York to provide working funds. As this stock sold at 128, faint faith was flickering up. We have gone far in the progress of steam in a century. To-day, over that same rail highway and many others dash locomotives carrying fifteen thousand gallons of water and twenty tons of coal fed by automatic stokers; and within the immediate future, five hundred miles of the same system will be run by elec-

tric power, increasing the haul of cars both freight and passenger double for one engine and one train crew, and eliminating boilers and tanks except for heating coaches.

Do you realize how closely the Hudson and Mohawk was still shaving an abyss? Coaches were running, engines were working, the roadbed was laid, people were traveling; but there were no passenger stations, no freight warerooms, no water tanks, no permanent supplies of fuel; and no one knew what the revenues would be. Any modern rail man shaving risks so close would have white hair in a night. The railroad was fined three hundred fifty dollars and thirty dollars in sheriff fees for laying tracks inside Albany limits. Schenectady was not so hostile. It hoped to become a second Albany. Albany hoped it wouldn't. The railroad had to charge the same rates as the Erie Canal, though the Erie froze up in winter and the cost of operating steam was higher in winter. By 1839, the railroad had to apply to the state for a loan or guarantee of bonds to the extent of three hundred fifty thousand dollars to meet its debts. It was charged stiffly for its loan — seven per cent; and repaid every cent. Part of this loan of credit went for extension to Troy and was obviously granted for just one reason — to keep Boston from getting Western Erie Canal traffic. The railroad was still jealously regarded as only a link — a necessary evil — between sections of water.

I cannot give the names of the magnificent New York men who, having put their shoulders to the

wheel, would not in evil days let go; but the Mills family comes in here. Anyway, by 1843, the company could borrow money at five per cent and they borrowed one hundred twenty-five thousand dollars and never repudiated a debt; by 1844, they borrowed another one hundred twenty-five thousand dollars. Most of these sums were for depots, double tracks, sidings, heavier iron rails; and they pledged every cent of their own stock as security. The Hudson and Mohawk going over a waterless hump was never forbidden to carry freight but it was held down in charges to a level with the canal. The canal could not climb that hill and it could not operate in winter; but steam was by law compelled to charge no higher than the canal. In seven years, the actual profit on freight was $3,926.15 — less than six hundred dollars a year — the wages of a scrubwoman in a car to-day. The superintendent of the line was receiving fifteen hundred a year, later raised to twenty-five. The presidents and directors of the company up to 1844 never received a dime for services. After that, the president got twenty-five hundred a year for giving all his time to the Hudson and Mohawk. Not a dividend was paid for five years, and the first twenty-five thousand dollars in 1847 — came from passenger fares. Steam had beaten canal on canal terms. From 1850, when most of the obstructing laws had been repealed, net income ran from four hundred thousand dollars a year up. By 1853, one million eight hundred thousand dollars had been spent on the road, six times its first estimate. Overdrafts at the banks often ran to one

hundred thousand dollars. Bonds were peddled round to bank customers, one bond at a time; and every bond had the right of conversion into stock. Seventy different New York directors changed in less than a year. The difficulty in raising cash to meet daily demands proved nerveracking.

The story of the Hudson and Mohawk is typical of the other links to Buffalo. These links cannot be tabulated as definite plans to reach the West, which the Baltimore and Ohio links were. The rails along the Erie Canal were rather the expression of the desperate needs in each locality for an outlet to market. They were really examples of freight back-flooding with ruin the producers and merchants, though they paralleled the canal so closely in spots as to be able to drop a stone in its waters.

The Utica to Schenectady was the next link. It was chartered in 1833 with the ample capital of two millions for its seventy-eight miles. Fares were fixed at four cents a mile for passengers, but on no account was anything but baggage to be transported as freight. Also, the railroad must buy out the turnpike people at twenty-two fifty a share. The one exception to the carrying of anything but baggage was mail. Subscriptions were received in New York, Albany, Schenectady, Utica, in amounts of five dollars; and they came in full at first call. The first officers — president, vice-president, secretary, treasurer — served for twenty years without a cent for services. The head engineer drew twenty-five hundred a year salary, the acting superintendent two thousand — which isn't

The *De Witt Clinton* that so astonished the people of New York on its trial trip was a ridiculous toy compared to modern standards. Tent awning covered the coaches which were carriages adapted to rail, the boiler was upright, and fuel was wood which sent clouds of sparks and smoke back upon the passengers.

far different from salaries to-day when you figure the buying power of the dollar.

Nor was so heavy a roadbed laid as earlier, but a much heavier type of iron strap was spiked on the rails. This was one of the trends to iron for rails, and later — steel. Baldwin was the builder of the first six engines. Still steam was not entirely trusted, for barns were erected at each water station. While this sop of conciliation was thrown to teamsters, the directors insisted the teamsters must give them a fair deal, and they exacted free sites from each hamlet, where stables were provided. This is one of the first instances in American rails where free sites were demanded. It was wise at the time, but proved the thin end of the wedge to the evils that followed later from the practice of ditching a town that would not donate a free site and then having to go the long way round through a free site.

The road was opened on August 1, 1836, with two trains of ten coaches each. It was the biggest day in Utica's history. There were three hundred passengers and receipts were four thousand dollars for fares both ways. Of the capital almost one and a half millions had been spent and the balance was to double-track certain sections. The first dividend came in 1837 — five and a quarter per cent. The Utica and Schenectady was one of the first lines to adopt rules for conductors — trains west on north track, trains east on south track; trains to run on strictly schedule time, the conductor's watch set with official clock at Schenectady; work trains give way to passenger; if

a train broke down, a flag man must be sent back eighty rods with flag by day, lantern by night; trains must be run at least ten minutes behind a preceding train; a bell must be rung eighty rods before reaching all crossroads, stations, switches; and lamps must be suspended to the rear of all trains at night; one-puff whistle, tighten brakes, two-puff, loosen, continuous long whistle, a station; a brakeman must be stationed at the rear of each train; no riding permitted on engines by strangers; badges must be worn by all train officers; a white flag the signal "all is right"; a red flag or light, "stop"; a light swung out to side of train, "stop"; a violent wave, "stop instantly — danger"; a swing above the head, "back up"; a horizontal wave, "go ahead." Owing to excellent management, the Utica and Schenectady could pay dividends of from ten to eighteen and one-half per cent.

Order was emerging out of an almost universal chaos.

The story of the other links of steam rails on to Buffalo is not very different from the early experience of the Hudson and Mohawk, or the Utica and Schenectady. The Syracuse and Utica was allowed to carry freight by its charter of 1836, but had to pay the tolls to the Erie Canal on freight carried during open water. The road opened in great jubilation on July 3, 1839. Bands played as the trains "whirled off to Syracuse through a dense forest over morasses and swamps." The company carried passengers free for one week to get people going by rail in preference to

canal and turnpike. The dinner given to five hundred people in the Syracuse hotel might be suspected of sinister purpose to increase the weight of the passengers if it were not that charges were restricted to four cents a mile. The road did not receive one cent of state or city aid. It was fifty-three miles long. It passed through a territory "with wealth" — as a contemporary record reports — "beyond the dreams of avarice." Piles were driven to bridge the swamps. Stone foundations had been tried and discarded. Operating expenses were held down with an iron hand and free passes were discouraged from the first — "not a dead head to-day" reports one conductor. Another day the "dead heads" were given as "a poor blind man and boy," "a poor immigrant woman and infant," "a crazy man," "two mutes," "a lame man." "Passengers were forbidden standing on platforms or getting on and off cars in motion." The Schenectady and Utica also drew attention to another fact which our Supreme Court only tardily recognized in 1927. A rail train could not get off its tracks for an intruder. Therefore, if farmers would drive cattle along the tracks or attempt to dash over a crossing before a train, the damages must be on the intruder, not on the rail company. Earnings for the first six months were now ten per cent over all costs. I cannot find whether they were paid or conserved against less favorable seasons. Anyway, returns came in at the average of six hundred dollars a day.

From Syracuse to Auburn was twenty-six miles,

VIEW ON THE HUDSON RIVER RAILROAD.

The progress achieved during the decades succeeding the memorable trial trip of the *De Witt Clinton* is obvious from this print. This engine and its coaches represent the intermediate stage in railroading.

and in the panic of 1837 a great deal of its four hundred thousand dollar stock was picked up by the New York people who were behind the Hudson and Mohawk. The road floundered into bad financial whirlpools. Drafts to pay for construction went to protest. There was no cash. Subscribers could not pay their assessments. The state came along with a loan of one hundred thousand dollars and in 1839 permitted a charge of five cents a mile for passengers. "I am almost in despair," wrote the desperate treasurer. "Is there no sale for the stock?" *The company had to issue I. O. U. notes for as small as five dollars.* It was jolting along to completion very much as a poor man buys a second-hand motor to-day by payments of five dollars at a time. Naturally, the state, forced to extend loans, saw the necessity of permitting the rails to carry freight but *only when the canal was closed.*

The Auburn and Rochester Road — seventy-eight miles, chartered in 1836 — began with the right to carry passengers, but freight only when the canal was closed; and passenger fares were held down to three and four cents a mile. A great many subscriptions to its two million stock failed to come in during the panic of 1837. The cost exceeded the capital by more than six hundred thousand dollars. It was on this railway that the leg of the lady passenger was "bitten" by "the snake head strap" coming up through the floor of the coach. By 1840, another appeal to the state was made to avert bankruptcy; but even state guaranteed stock — two hundred thousand

dollars — could not be sold at any price. Nevertheless, through trains were running by 1841. Poor lame duck among all the rails of the era! It had come through a panic and was just stumbling along on its groggy steam legs when public indignation assailed it in a furor. " It was the worst managed road " in the country. Mails were late, trains were late, equipment had the rickets, the roadbed rocked to every train — away with the scapegoat! Solely to hold and induce investment, nine dollars a share was paid in 1842 as interest — not dividends — on subscriptions from 1836.

Anyway, in spite of all these tribulations, order was again coming out of chaos. The Auburn and Rochester began to see that if it could hitch up to the other links from the Lakes to the Hudson, it might have a chance to survive. It began selling through tickets. Sectional feeling was giving way, if not to a national outlook, at least to a state outlook.

For those who are interested in the scale of pay in 1840, the superintendent and construction engineer got three thousand dollars a year each; the conductors six hundred; the freight agents, four hundred eighty; the baggage men three hundred; the engineer from seven to eight hundred.

The Rochester and Syracuse was really an 1850 consolidation of the Auburn and Syracuse with the Auburn and Rochester with over four millions capital: double the stock of the two united companies; but nobody shouted " watered stock," for there had to be more stock sold to avert bankruptcy; and it is

pathetic to relate that of the stock so offered, the public bought only $8,340. I don't know how both roads wriggled through this squeeze, for there is no record; but wriggle through they did — probably by selling privately to the New York banker groups behind the other links of the chain from Albany to the Lakes.

How do we know that extra two millions was not a gratuitous bonus — or " watered stock " — to those banker groups? Because the final completion of the line was $2,026,339.95, or twenty-six thousand more than the extra two millions taken over and financed in New York. This is a very important point and should not be ignored: the charge has been made again and again that " water was squeezed in the whole system " at this period for which the public had afterwards to pay tolls and dividends. We shall meet plenty of " watered stock " before we finish with the story of rails; but this was not one of the cases. Notes given by the company at this time went to protest from five dollars up to one hundred thousand.

The Tonawanda — forty-three miles, chartered in 1832 — got under way for trains by 1837 and fortunately all its five hundred thousand dollars was subscribed before the panic. Largely because the farmers along this line were big shippers of wheat, it was unhampered by foolish regulations as to canals and turnpikes. The first train was hailed with the wild jubilation that greeted Lindbergh's flight across the Atlantic:

"When we reached the Depot the engine was snorting like an impatient war horse; and at a given signal, it sped forward "like a thing of life." Hearty cheers from the multitude scattered along the line of road greeted its magic progress, and gave a thrilling animation to the scene.

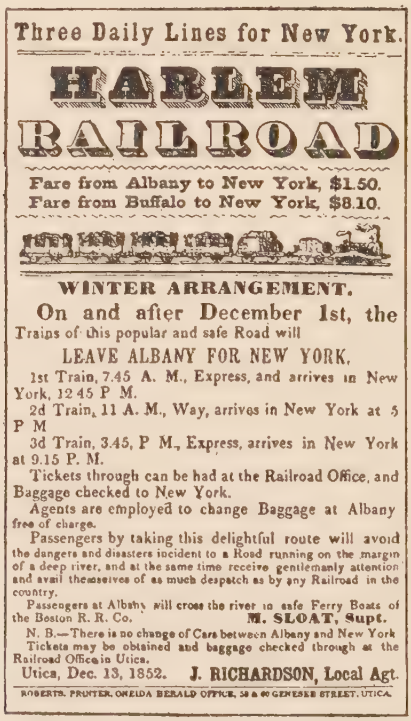
"In 40 minutes we were at Churchville. Its inhabitants gave us a cordial welcome. As we bade adieu to their kind gratulations, the waving of the 'kerchiefs showed us that the ladies also participated in the hilarity of the scene, and appreciated the important influence which the Road would have upon the prosperity of their pleasant village.

"At Batavia was animation. The Road for a mile was lined with citizens. The cheers were long and loud, and the thunderings of the cannon, called into requisition on this occasion, responded to the "three times hoorah," which was elicited from the cars by this grand reception.

"At the place of landing the company were reviewed by the corporation and a Committee of citizens of Batavia; and escorted to the Eagle, where, in due time, a most sumptuous dinner was served by "mine host" Mr. Smith. To gratify the palates of his guests, and to add to his own good name, he seemed to have monopolized the choicest delicacies of earth, air and water. Fresh salmon, white fish and shad — wild ducks, snipe and pheasants — new radishes, salad and cucumber — were among the luxuries of the table."

Nevertheless, the company had to increase its capital two hundred fifty thousand dollars in 1844 and to increase its rate to four cents a mile to replace rails. The damp climate closer to the lakes rotted the

wooden rails. The railways were gradually working to iron for rails, then to steel; but the replacement of rails taught all steam companies that *a railroad is never completed.*



Three Daily Lines for New York.

HARLEM RAILROAD

Fare from Albany to New York, $1.50.
Fare from Buffalo to New York, $8.10.

WINTER ARRANGEMENT.

On and after December 1st, the Trains of this popular and safe Road will

LEAVE ALBANY FOR NEW YORK.

1st Train, 7.45 A. M., Express, and arrives in New York, 12 45 P M.

2d Train, 11 A. M., Way, arrives in New York at 5 P M

3d Train, 3.45, P M., Express, arrives in New York at 9.15 P. M.

Tickets through can be had at the Railroad Office, and Baggage checked to New York.

Agents are employed to change Baggage at Albany free of charge.

Passengers by taking this delightful route will avoid the dangers and disasters incident to a Road running on the margin of a deep river, and at the same time receive gentlemanly attention and avail themselves of as much despatch as by any Railroad in the country.

Passengers at Albany will cross the river in safe Ferry Boats of the Boston R. R. Co.

M. SLOAT, Supt.

N. B.—There is no change of Cars between Albany and New York

Tickets may be obtained and baggage checked through at the Railroad Office in Utica.

Utica, Dec. 13, 1852. J. RICHARDSON, Local Agt.

ROBERTS, PRINTER, ONEIDA HERALD OFFICE, 59 & 61 GENESEE STREET, UTICA.

As early as 1852 the trip from Albany to New York was made in five hours.

The law of 1847 required the laying of iron rails. Now iron rails had to come; but to force them faster than revenues warranted was a staggering burden. Stockholders went down in their own pockets for six hundred thousand dollars.

The Utica-Buffalo — thirty-one miles — and the Rochester-Niagara were the last links of the iron chain forged from Albany to the Lakes. Not much need be told of these lines except that in 1841 contractors took pay half in cash, half in stock. They do not seem to have "padded accounts" and overcharged; for the cost was only from five to eight thousand dollars a mile; but then there was that foolish requirement to pay canal tolls during closed water. Buffalo, being Western headquarters from New York to the Lakes, was very hostile to rails. At first she would not permit a steam engine inside the city limits. When you consider what rail and water combined have done to build up the Buffalo we know to-day — that city regulation is laughable.

Rates were so variable along all the links as to be unexplained — from six cents a mile between Schenectady and Troy, to three on other sections — unexplained except that the sinister hand of politics had intervened.

By 1851 all tolls paid by the rails for the benefit of the canal were abolished by law.

Right here let us take a look at national and international affairs to see how they reacted on American transportation. Germany was in the middle-century era of her struggle for liberty and "the sons of 1848" were pouring to America in flood tides. Of these, the farmer class was pushing West and the New York and Baltimore systems were ready for them. Their fares swelled the revenues of rails westbound, and their produce from farms in the West and

Middle West swelled the traffic eastbound to Seaboard and to the Eastern factories which bought their raw material and again shipped much of it back to the West and Middle West. This class of colonist made the backbone of the great Central States we know to-day. The few Germans who remained in Eastern cities, became the great class of bankers and importing firms.

Ireland was suffering from both famine and misgovernment; and millions of Erin's sons were flocking to America as the land of plenty and the land of the free. The most of these came penniless except for their fare across the Atlantic. They were compelled to take the first jobs that offered; and the first jobs that offered were physical labor in the Atlantic cities now going ahead in population by leaps and bounds and on the rails now racing Westward. The Irish-American became first the unskilled worker in the cities, then the contractor, then from 1850 to 1880 — a political power. He became on the rails the grader, the shovel and pickaxe brigade, then contractor and, in not a few cases, the president of the rail on which he had begun as " shovel stiff." He was riotous. He was merry. He was lawless and hard to control except by his own compatriots; but he worked like a demon. He made " the dirt fly "; and to him we owe in this era much of our rail building. Also he was dauntless, quenchlessly ardent, and boundlessly ambitious. He was thrifty, too, and determined to go up; and he injected a tremendous impetus in American life.

As the German colonists added to the freight traffic

of the rails, the Irish colonist now provided the rails. The banker class both in America and in Europe had to provide the capital in the pooled savings of German and Irish to oil the wheels going forward.

Last but not least were two other factors. Oregon was now definitely United States territory. The rush to Oregon, which began in 1842–43, did not abate till the Civil War. It began as a religious missionary movement. It ended as a great migration — one of the greatest mass movements of people the world has ever seen. As the foreign colonist came in and bought cheap Middle West land, the pure-blood American pitched comfort to the winds and trekked to Oregon — two thousand miles. Next, gold had been discovered in California; and the West became known as the Pacific Coast rather than the Mississippi Valley. Men of every race, of every nation, of every station in life, dashed for the gold diggings in a mad stampede, though there was not a rail to carry them beyond the Missouri till after the Civil War.

So many contemporary factors geared rail construction up to a pace too fast and too costly for its own good.

PART III

The West Moves From The Lakes To The Prairies

Chapter IX
The Arabesque Of A Magic Carpet
1826–1850

DID the child ever live, who did not at some time dream of the Arabs' Magic Carpet woven in strands of silver and gold and blue and green on a background of dark velvet texture, which came floating out of Nowhere Land and wafted in a jiffy to the Land of Desire? And as we grow older we sigh — What a pity we can't retain forever those childish fancies! Why must the hard facts of life shatter such dreams to a cynical distrust of everything but hard knocks as teachers?

And yet — try to think back to the fancies of youth! Try to think back to the youth of a nation, when no sky was too high for airy flight. Imagine such a child of 1828 being sent up in an aeroplane of 1928! What would he see as he looked down and back behind the flight of a brief century? I mean, what would he actually see, not just fancy?

Between ridges of forested mountains on the Atlantic side, slopes of densest green, forests like velvet, little silver strands of water glistening and wimpling and gliding towards the sea, with two rails of silver small as threads in a mosaic carpet running along parallel with the shining rivers; and where the rivers dwindled and lost themselves in the velvet green forests, the two silver threads would run on up the slope, or disappear for a moment in a black hole through the rocks to come out on the other side with a puff of steam white as fuller's fleece. Between the Alle-

ghanies and the Mississippi, the magic carpet would change in its texture. Not so many velvet forest slopes — but bigger rivers, broader strips in the pattern of a wonderful weaver, but still the two little silver threads with the puff of white wool; and where stream crossed stream, or silver threads interlaced with other silver threads, little houses like a child's blocks and, in the passageways between the houses, little boxlike playthings on wheels with the swiftness of fleas and little people hopping out of their way like colonies of disturbed ants. In a contest between ants and fleas, I am not sure which would win; but I do know that up to 1928, most human ants prefer to hop out of the way of motor-car fleas. If it were summer, our airy traveler would see the most amazing arabesque of green corn and golden grain in patches from the Eastern ridges to the Mississippi.

Does the allegory need to be spelled out to the dullest sophisticated mind that ever lived? An aeroplane traveler would have to be blind not to see. Was then, the childhood dream of a magic carpet true? Yes; it was true. It came true in a century's weaving by a wonderful shuttle. What made the dream come true? Just what makes all good dreams come true: knowing first or, if not knowing, finding out by "wit-ty inventions" — that is, inventions that required wits, lots of wits; then a will to do — willing so hard nothing could stop the will; then daring to do — daring so nonstop that, if a mountain lay in the way, it was torn out of the way; then doing — which sounds simple, but it wasn't any easy walkaway. It

took muscle, it took brain, it took brawn and blood sweat, it took patience, it took faith. Then keeping silent and letting results speak. And behold there was the magic carpet from a century's shuttle. I ask myself, is there any great dream of the human mind too high for the sky?

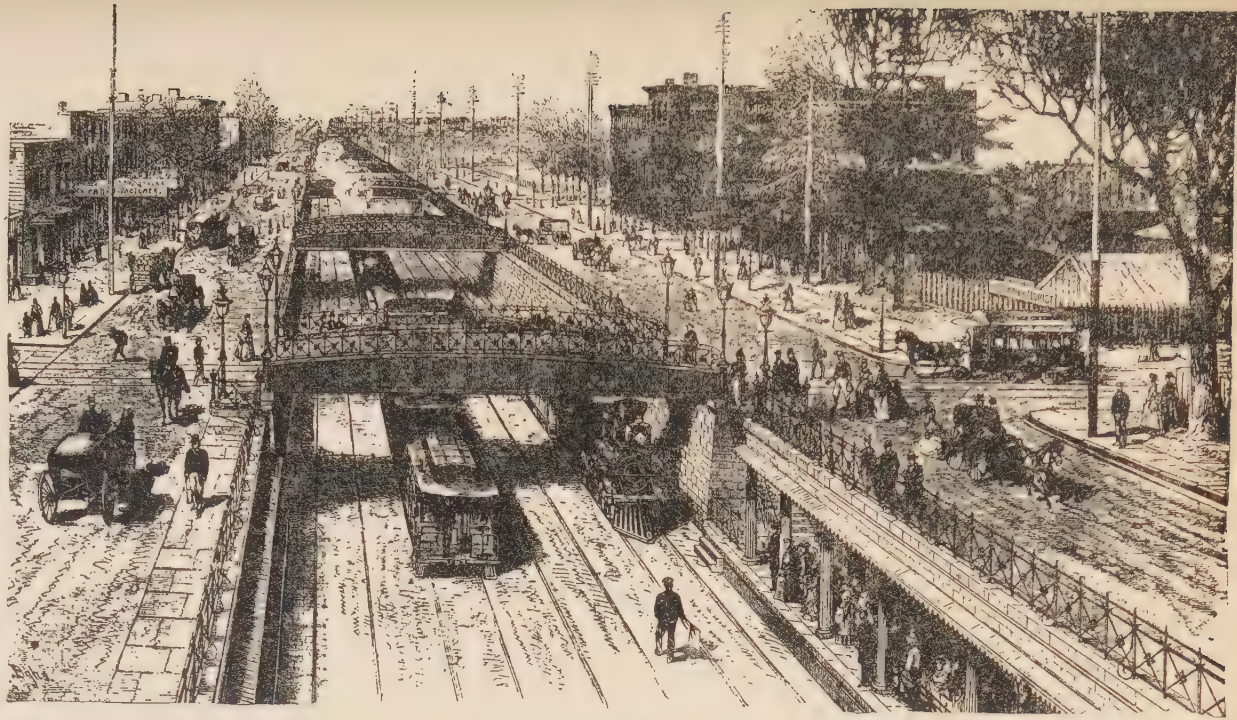
I don't know whether it was because the Quakers did not like fairy stories, however much they trusted mystical visions and dreams; but I do know that though Boston and New York and Baltimore were making dreams come true, for some reason or other Pennsylvania hung back on steam.

New York had not stopped with the spanning of all obstructions from Albany to Buffalo. As the Albany to Buffalo links were growing yearly from 1825 to 1850, she was trying out many other short lines with steam. These were chiefly short lines as feeders to her city. Look at the map again! The State of New York is very much like a flag pole with flag flying west to the Lakes, and the great seaport city at the bottom of the pole. By the Albany to the Lakes line, she had provided a strip of highway westward right across the top of the flying flag; but she had not yet sent a rail up parallel to the flag pole for the winter season, when the Hudson lay frozen. It was perfectly natural that line of travel should occur to the city up what is now known as the Harlem, or border between New York and Connecticut; for down that road came the beef cattle and milk and food from the upper state to feed the city now growing from two hundred thousand so fast it could hardly provide its

own needs. The entire population of all the states in the Union was little over five million when rails began to be built. By 1840, it was nearly fourteen million; and New York State alone numbered two and a half million. It was natural New York should look up the Harlem first, or parallel to what was the Boston-New York turnpike road, because from Fourteenth Street north was a suburb of farms through which the public roads were pig wallows of mud in mild weather and deep ruts of ice and drifts in snows.

The Harlem was first planned as little more than a city tramway from seven to fourteen miles as funds could be raised to build; and the building was enormously expensive. It cost $137,500 a mile. Right of way had to be bought through suburbs. Farmers, teamsters, post roads fought it. Berkshire Hill towns on the post roads thought it would have to come round their way either on the Connecticut post roads or on the New York post roads and put figures for sidings and depots up so high that the Harlem surveys advised running between these two post roads. Their advice was followed with results of a century's decline to these old post road towns; but that did not come all at once. People gradually moved away.

The charter was given in 1831 and the road opened for four miles in January, 1833, when the Hudson lay frozen. The plan was to go right up from the City Hall to Dover Plains, then on to Chatham, where connections could be made: west up the Mohawk, east to Boston, and north to Montreal; but the cost had been so enormous that it had to increase its capital



New York City eventually solved the problem of bringing trains into the heart of the city by sinking the tracks of the New York and Harlem Railroad. This old print shows the open cut at 126th Street.

from three hundred fifty to seven hundred fifty thousand dollars, and when by 1839 it had added seven more miles, it had again eaten up its capital and had to double to build to Chatham by 1852. The panic of 1837 was possibly a good thing for the Harlem. It kept it, in railroad parlance, from "growing too fast for its breeches." It did not grow faster than money came in. It was one of the most profitable lines ever built. Even in the panic era its stock seldom fell below 45 and 36.

But New York's high hopes for checking the flow of wealth north to Montreal by Lake Champlain were knocked hopelessly on the head by that panic. They were not fulfilled until late in the fifties. Meanwhile little feeders were pushing over Long Island from Brooklyn. These were built too much as tramways to come into the essential story of steam on rails; but they do prove that, even competing with open water where ferries and schooners and steam on water were usable twelve months of the year, and thick as gulls on wing, steam on rails was quicker, more frequent, more dependable; and the best service in Long Island and on the Harlem was a thing to make patience weep. Time tables were printed but not followed. Local stops had not been worked out in terms of time. Loading and unloading, mixed trains for passengers and light freights, lack of sidings for trains to meet and pass — threw schedules so completely out of joint they were a joke. Still men used steam on rails. Ships were cheaper; but shippers used rails. The little slat-seated passenger cars, with dusty windows

and no blinds, were so cramped a tall man had to stretch his legs in the aisle or hang them over an empty seat in front. Pictures of all this can be seen in prints of the period; and they were not given as cartoons on the badness of the service, but on the excellence. Up to the late forties, the only heat was a brick bought from urchins at the station, or a little wood stove at one end of the draughty car. Vestibules, there were none. Light at night, there was none. Porters, there were none. Baggage, you slugged or lugged or fought over with saucy cabbies. Springs on coaches and padded seats had not come in except on what were regarded as " through " trains; so morals did not suffer as predicted in the Boston papers. Candles had been replaced by smoky lanterns. Bells were now in use to signal the engineer by a pull on the cord; and whistles by steam had replaced the tin horn of the early conductor and the ram's horn of the turnpike. Station eating houses where a sandwich and coffee could be snatched were now going up: they did not need to be snatched very speedily; for a local that paused to take water or wood had a way of sitting at its leisure, until scheduled watches and clocks at divisional points began in 1842 to enforce some approach to following the hour of an advertised timetable, especially on the *fast expresses of thirteen miles an hour*. As all know, these little Long Island feeders to-day work in with the Pennsylvania system; but through that system they feed into New York just the same.

Again you must look at your map, especially if you

are a little hazy as to where New Jersey lies in relation to that flag pole of New York down the Hudson, and the area of Pennsylvania south of that " through line " from Albany to Buffalo. Close to the Hudson, New York had not grasped that rails paralleling her great river could be financially profitable; so her little feeder up to the Catskills west, and to Binghampton and Elmira and Ithaca, were as yet only conceived as supply links to her Albany and Buffalo lines, or side runs down to the Hudson. They did not come into her big plans; but something else did come into her big plans, and it came as usual through her pocket nerve. As a result of a frightful fire, which swept all the business section of New York from Canal Street to the Battery, coal was coming into use in place of wood; though wood cost only a dollar fifty to two dollars a cord, while coal cost fourteen dollars a ton. In the buying power of the dollar up to 1840 that would make the price of coal to-day about forty-two dollars a ton.

The problem to prosper New York City was to get that Western market for her wares. That would fill cars going west; produce from the farms would fill cars coming east. But how about coal from Pennsylvania mines right across Pennsylvania and New Jersey to New York City — whole trains of cars? I do not want to anticipate the story or to clutter it with useless dates; but out of those plans came a reduction in the price of coal to New York from fourteen dollars a ton to five. Also out of those plans came the development of the first belt line rails across the northern half of New Jersey and the northern three-

quarters of Pennsylvania. Out of those plans came ultimately the great coal roads like the Erie, the Delaware and Lackawanna, the Lehigh, and the Reading. Any one of the thousands who yearly go up to Chautauqua Lake from New York City, no matter which line is taken, knows how they skirt across the northern angle of New Jersey to dive suddenly across a most picturesque and beautiful section of Pennsylvania. The plan is a very confused story; for part of it goes up the Delaware and part of it up the Susquehanna, and all of it involved traversing three different states with three different sets of laws, and three different sets of canals and legions of hostile canal and turnpike companies. Again anticipating the story, the completion of the magic carpet's shuttle here made Pittsburgh, which had always been the most important fort west of the mountains, the second most important freight center in the United States. If you watch a hand weaver of carpets, you will see how often a central pattern is woven in and the connection not made with the border till center and border are finished. It was so now with these coal roads. They went on at first in patches with no more idea of becoming belts in a through line than the Harlem tram line. With two of them, the Erie and the Lackawanna, the fight was going on in 1928 to become links in a great " through " system. They began in such patches of links with names changing as little links collapsed, or charters proved unworkable, or canals and turnpikes forced unprofitable terms, that to give the multitudes of names under which they were first known would confuse the

mind. For instance, in the northern belt of New Jersey alone, I count up eight lines of which we do not recognize the names to-day.

Take the Erie! Why should the Erie be built at all? From the citizens assembled in Jones' Tavern, Jamestown, New York, there came a howl in 1831 for a short cut across the northeast corner of Pennsylvania and New Jersey either to New York City or Philadelphia. From Binghampton and Elmira right to Jamestown came the demand. Some wanted a one-charter road; but who ever dreamed of a five hundred mile "through" road in those days? Others thought it a much safer policy to build in links from point to point and use the lower canals as seasons permitted. When a charter was finally given, it forbade crossing Pennsylvania or New Jersey at all. This was like the woman's permission for her daughter to go swimming, provided she didn't go near the water. The northern towns, desperate at such a charter, invoked the Federal Government to make the survey. President Jackson approved, but practical action was blocked politically by the canals, — three of them — the Mohawk, the Susquehanna, the Delaware. (These were not the names by which the canals were known at that time, but they are the river systems along which canals more or less passable let light draft sloops and tugs traverse in high open water.) The survey had to be made at private cost and it presented the staggering total of ten million dollars as the least possible outlay for such a road. Of course, such a figure was deemed beyond human effort.

And the difficulties of the Erie over finances were small compared to the ferocious rage of tavern keepers, teamsters, turnpike men between links of its progress. In 1846, in upper New York State, mobs tore up tracks connecting sections and trampled underfoot court injunctions forbidding interference with transfer of passengers. What were comfort of passengers, prompt time, continuous tracks, to these mobs of angry men seeing a hated monopoly taking the bread out of their mouths in night stops at hotels, bus fares, teaming, turnpike tolls and fees for repairing turnpikes in slack seasons? What were New York shareholders and bondholders to them? These battles at points where links connected became known as the "Isthmus Wars"; and the discomfort of transfers from line to line can best be seen in old pictures of teams wading through snow drifts belly-deep hauling coaches to an upset. Wouldn't New York get the trade, these small hamlet merchants formerly held? Those early years of all Eastern rails were symbolical of the obstructions, mob anger, legislative folly, wasteful swindles; but in the end triumph over all difficulties; and the fools and the swindlers left at the side of the flag of progress — bleaching bones that are monuments to their own folly and rascality. The names that survive among these are names with stains that can never be erased and will always be used to point a moral of ill-gotten gains cursing the getter and taking to themselves wings. They belong to the vulture era of American rails, and will be given fully in that era.

Chapter X

Old Ironsides Becomes A Winged Steed 1826–1850

PENNSYLVANIA began steam so well that it puzzles one why she lagged. That is, it puzzles until you carefully study the map.

Here was Baltimore to the south with a railroad climbing over mountains westward to the Ohio. Here was New York to the north with rails climbing over the Albany-Schenectady hump westward to Pittsburgh and the Lakes. Was it that the Quaker, with his first flush of faith in a great vision, let caution float a cloud across that vision? Or was it that in an obviously risky game, the Quaker was going to let New York and Baltimore — yes, and the canny Puritan of Boston — take all the risks till the game proved safe? Possibly all three influences tinged the general attitude; but on closer examination the real cause of slow growth in rails lay in a faulty public policy. It was a public policy based on the deepest integrity and good faith. It is another example of the best of good intentions not always paving the way to the best of destinations.

Pennsylvania had profound faith in the superiority of water over rail. This was natural. She lay on a magnificent body of water — the Delaware — and had spent lavishly on canals. Long before 1840, Pennsylvania had spent forty millions on rails and canals; not a third had gone to rails. She had done more. She had worked hand in hand with her neighbor New

Jersey to bring New Jersey's southern and western traffic down to her doors.

New Jersey, too, had been as enthusiastic over rails as the other states, and she had not been ungenerous to them; but she knew, as we know to-day, that her northern trend was to New York and her southern to Philadelphia. Perhaps she leaned a little too heavily on those neighbors to take the leadership herself. Her rail charters up to 1833 covered a capital outlay of almost ten millions; but so many of them embodied impossible features that few could be used; and those few were chiefly backed by New York and Philadelphia men. There was that foolish clause — the right to repurchase — which frightened timid subscribers. There was an act restricting fares to four cents a mile. After a ruinous panic was a bad time to restrict fares on ventures still fraught with terrible risk. There were transit taxes of ten cents for each passenger, fifteen cents for each ton of merchandise — before any one could guess the number of passengers or the quantity of freight. The Delaware Canal, of course, did not like these prospects of rails, especially as some of the short lines were beginning to lay heavy cast-iron rails instead of the thin iron strip. This looked like permanency. In return for her charters, New Jersey gave some few roads an absolute monopoly in this area and also exacted a revenue by retaining a fifteenth of the stock. Those lines were profitable from the beginning and gave the state a revenue of twelve per cent. In one — the Camden-Amboy line — the monopoly aroused the usual

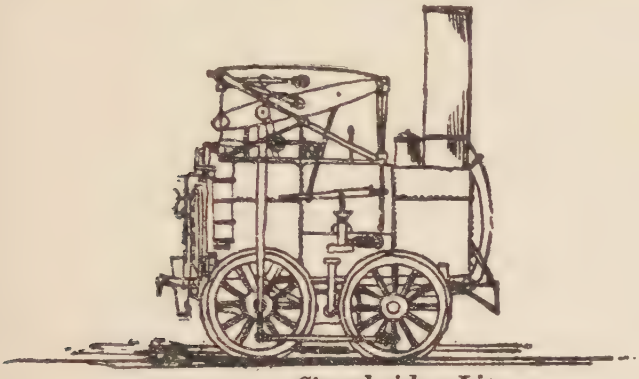
charges of rascality to the state; but an impartial investigation proved that the monopoly had paid the state ten thousand dollars more than was due, and got it back.

But southern New Jersey was geographically linked up to Pennsylvania, and Pennsylvania wobbled between pushing the coal lines and hanging to canals as the best carriers. Colonel Stevens had a charter as early as 1823 to build a rail line up the Susquehanna; but its existence was limited to ten years by law and, of course, it could not go ahead. Finally, in 1829, the state took Stevens' charter off his hands and completed a state-owned line — the first in the country — for eighty-one miles in 1834; but, like one of Canada's great transcontinentals, the first idea was for the state to own the line and rent it for use to any one who paid the charge and put on horse, mule, steam power. The state would on request supply engines. The experiment ended as it did in Canada a century later — in heavy loss to the state.

It will be recalled that a Mr. Allen had been sent to England to buy English engines in 1828. Two of these, the *America* and the *Stourbridge Lion,* were tried out in 1829, Mr. Allen running the *Lion* across a trestle to the wild acclaim of people who would not risk their necks by accompanying him. The *Lion* was too heavy and cumbersome.

The state had meanwhile double tracked part of its line up the Susquehanna. Working in a Philadelphia jewelry shop was a man then in his early forties, Matthias Baldwin. Like Fulton of steamboat fame,

he had turned his hand to engines and built *Old Ironsides* — four wheels, five tons, horizontal boiler, tender with water and fuel behind — good for twenty to thirty miles an hour. Within a few years, Baldwin had perfected an engine that could do sixty miles an



Stourbridge Lion.

A heavy and cumbersome machine, the *Stourbridge Lion* of 1829 was one of a number of unsuccessful importations from England.

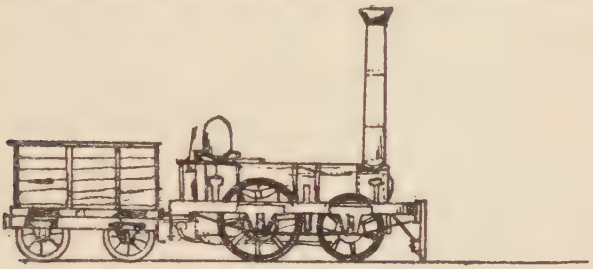
hour; but a twenty-five-ton engine was a giant in those days. Cab shelter for the engineer, springs for the axles, spark arresters, and countless technical improvements came later from Baldwin, the jeweler, whose great locomotive works are a monument for their founder to this day. One would have thought this and a state-supplied track would have spurred steam rails in Pennsylvania; but it didn't. If the state would build rails, let the state do it. Hit-and-miss service by independent carriers was too undependable. Philadelphia merchants were shipping their goods west by way of New York. The state rail lines

were finally sold to what is to-day known as the Pennsylvania Railroad.

Meanwhile little links from Philadelphia to Baltimore, from Philadelphia to Germantown, were going ahead and intermittently standing still under independent small private ventures. With the exception of the Reading, not one proved successful either in revenues or in service; and the Reading was essentially a coal line. Southern trade was going to Baltimore; Northern trade to New York.

Something was essentially wrong with the Quaker State policy. Under these auspices the Pennsylvania railroad charter was born in April, 1846. It was to put a road through from Harrisburg to Pittsburgh. Its capital was ten millions, later increased to fourteen, the state to be paid a tax for every ton of freight — not a heavy tax, about three mills per mile — and the road could be purchased by the state in twenty years, after paying investors eight per cent and deducting all profits from the principal to be repaid. As the road cost over fourteen millions, the capital and a good margin of revenues were absorbed from the first; but it was able to pay six per cent interest on subscriptions, till it began to pay real dividends in 1856. Up to 1860, only one-fifth of the money needed for extension was raised by bonds. This speaks volumes for the wise and careful management. The Pennsylvania has the longest record for continuous dividends in the United States. It goes back eighty-one years and the dividends total almost a billion dollars.

But how raise that capital in a state where rails had failed and lagged owing to a mistaken policy? Shares were peddled from house to house in Philadelphia and sold one at a time for fifty dollars, with not the slightest hope of remuneration, and sometimes only one dollar down on a subscription of five shares at a time, the rest to be sent in as money was called for needs. In that way three millions in cash



Old Ironsides.

Old Ironsides, built by the founder of the Baldwin Locomotive Works, marked the beginning of the modern American type of engine with a tender behind and a horizontal boiler but with a smoke stack still too tall to pass under overhead bridges.

was gathered up and fifteen miles put under the spade in a year.

From that date to this, the Pennsylvania has never been controlled by any clique of financiers, but owned solely by the public investors, of whom forty to fifty per cent are women. To this day half of the Pennsylvania's big family of one hundred forty thousand shareholders own less than ten shares each. This kind of rail stock can never become the sport of gamblers. It is the best example of true public ownership. The president of the Pennsylvania was paid five thousand

dollars a year to give all his time to this road — the most liberal of all rail heads' salaries at the time. The company was given permission to buy shares of other roads that would facilitate connections; and then began a policy of buttressing its strength by buying independents before they became obstructionists. In this way the road gained entrance to Cincinnati, Pittsburgh, Chicago, Columbus, and really right of way from the Ohio Valley to St. Louis. It will be noticed it was " the call of the West " that lured the steam flag ever and ever onward. What was the West at this time? It was Illinois with roughly eight hundred fifty thousand people, Indiana with almost a million, Kentucky with almost a million, Michigan with less than half a million, Ohio with nearly two millions, Wisconsin with about three hundred thousand; and that West had thirteen hundred miles of little struggling lines of which the Pennsylvania controlled not quite half. This was a tremendous market as a prize for the Atlantic cities.

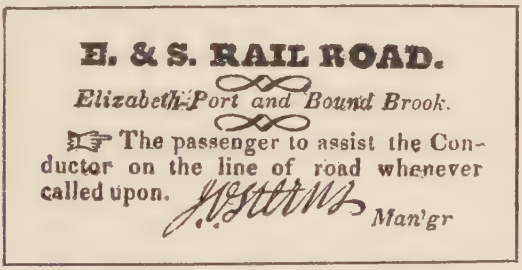
The Pennsylvania put on a uniform gauge for " through " trains. If you look up rail stocks, you will find that, in periods when other rails were gyrating in a macabre death dance, " the Pennsylvania " held steady at 93 to 88. By 1850, when New York had fourteen hundred miles of rails and Massachusetts one thousand miles, Pennsylvania had nine hundred. Only one authority puts the figures higher for Pennsylvania by three hundred miles; but when the Pennsylvania took over the state line, it took over in part a double-track system; and much of this double track

was useless. It was a gravity road. (For the benefit of readers not familiar with modern mining and lumber camps, a gravity road is simply a road of two parallel tracks going in a straight line — not curves — up a hillside, on which the loaded cars running down a cable of their own weight pull up the empties or the loaded cars on the other line.) These clumsy devices were discarded by the Pennsylvania for switchbacks, a curving ascent up easy grades, or for tunnels, of which it built one of the first.

Private ownership was doing what public ownership did not dare — what, in fact, rival states would not have sanctioned.

In the progress of steam, prejudice was now giving place to proof.

The Pennsylvania was one of the first roads to recognize that in dignity and responsibility the train conductor was the equal of the officer in a small unit of


E. & S. RAIL ROAD.

Elizabeth-Port and Bound Brook.

☞ The passenger to assist the Conductor on the line of road whenever called upon.

Man'gr

In the early railroad days the possession of a ticket carried with it an obligation to lend a hand in case of a crisis.

the army. The "captain of the train," or conductor, was vestured in an army costume — blue coat, brass buttons, and gold stripes for years of service. The brakemen were put into gray sack suits.

Ignoring for the time minor technical inprovements in machinery, which were now coming along so fast they can hardly be set down before being discarded for a better, let us see what was happening in the larger, deeper policies of steam on rails:

Iron rails were taking the place of wood, just as iron was to be replaced by steel.

Gravity systems were being replaced by grade ascents in switchbacks and curves and tunnels.

To a T-shaped rail was now added a deeply flanged wheel rim to hold to the T rail. This may seem unimportant, but it banished the fear of the speeding train not staying on the rail on curves.

Speed was no longer feared — even speed of sixty miles an hour.

Freight had not been considered essential in the early tryout of rails. Passengers were the all-important. Now freight, especially on the coal carriers east and the cargo carriers to the Ohio, was as great a revenue producer as the passenger.

Rebate fees paid by the rails to the canals and forced by law to be so paid were now beginning to show their sinister features. They were the seeds of a weed that was later to bloom in all its wicked features, and to multiply like the wild mustard of the prairie which in high winds blocks against barbed wire fences eight feet deep and spreads wasteful ruin on all surrounding crops. Rebates had begun to canals. With rails now permitted to carry freight, "runners" — or what we call freight agents soliciting traffic — went among shippers to get freight away

from canal lines. There was nothing in the law at the time to prevent these " runners " offering a big shipper a discount on quoted rates. Up to 1850, rebates do not seem to have passed this discount line. At the time they were no more than innocent devices to fill empties and avoid delays of filling half empties at local points; but in the next quarter century, this evil went much farther. Not only did the big shipper demand rebates as his right; he demanded paid to him — not to the rail for its service — a rebate from all shipments by his rivals; and, of course, such rebate was to be paid to him secretly. It sounds complicated, but it wasn't. This practice really came to its full bloom as a noxious, assassin thing in the bitter wars between big oils and little oils. Selling at perhaps the same price, the little independent could not understand why he was losing and skidding down to ruin, where the big fellow selling at the same price was making huge profits. It was really a cunningly concealed device to steal from another man's pocket; and it began in the early rebates paid by rails to canals, and then by rail " runners " in discounts to big shippers.

Consolidation — the linking of many little lines in one — had been forced by necessity. Innocent enough in the beginning, at a later day this was used by inside rings to double, treble, and quadruple capital, and sell the stock to the public; then when the bubble of more stock than could possibly earn dividends had burst with ruin to the investors, retirement of the rascals, who had pocketed the proceeds, to the ob-

scurity of "ill-health" or "disagreement with the directors' board." One excuse was as good as another. The public held the bag and suffered the loss.

Some sound lessons had been garnered, as well as unsound examples set up as red signals.

Profits to investors could not be ignored. Otherwise, investors would buy neither stocks nor bonds.

Rails were not a free highway. They were a common highway, open for use on payment for service. Steam had right of way on crossings, for the simple reason that the train could not get off its rails. The foot passengers and the wagons could.

Freight was beginning to be classified according to weight, quality, speed, bulk, local stops, long unbroken hauls — the beginning of the long-and-short-haul fight; but by 1850, there were exclusive coal trains. Coal, for instance, should not be mixed in one car with grain. Butter and milk took taint from pork and beef shipments. Heavy stone did not mix well as a cargo with bulky light hats, or expensive packages of silks, or sponges and drugs and explosive gunpowders and fragile furniture.

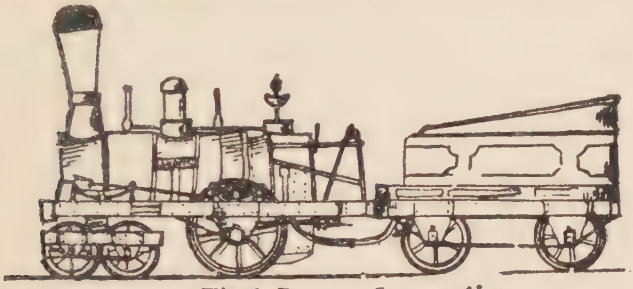
A uniform gauge of four feet eight and one-half inches was becoming universal.

Signals, couplings, head and tail lights were becoming uniform.

Rail rates made inflexible by law had failed. They had hurt shippers just as much as they had investors.

The growth of great city centers wherever rails converged "in a net" was now unmistakable. Whether this was a good or a bad thing for the race,

we do not yet know. There are possibly as many opinions as there are people; but if you look at the map from Albany to Chicago, or New York to Chicago, or Philadelphia to St. Louis, the trend is so self-evident it demands no proof. One side would perhaps point with pardonable pride to common systems of steam heating, of electric and gas lighting, of paved roads smooth as a floor, of city tramway service at five cents for twenty miles, of sanitary bathrooms, of great, cheap-merchandise department stores. The



First Rogers Locomotive.

The Rogers locomotive represents another step toward the development of the modern American type of engine.

other side would point with bitterness to what is called "the devilization of civilization" — the cave life of the great apartment house and tenement; the boxing of millions of human beings in small areas dependent on far farms for pure food; the high cost of inferior foods contaminated between field and table; the street as the poor child's playground; the passing of the old neighborly spirit in small communities; the almost universal renting of homes in big cities. Motor and electricity may yet lessen many of

these evils; but whether greater good or greater evil has resulted to the race from converging in a net vast numbers of workers, no one can deny the enormous benefit of the rail in growth of values to the farmer along its twin tracks.

Seven thousand dollars was still regarded as a very high price for a high-speed engine. Compare that to a three hundred thousand dollar locomotive to-day — not steam, but electric — and we have traveled so far in a century's garnering from the lessons of experience, that no sane mind can to-day say " Nay " to the wildest dreams of the wildest dreamer, or the farthest vision of the most inspired prophet. We may be traveling in spirals that seem to go down, but the spiral is always pointed up. We may seem to come back to where we began as the switchback up one side of a mountain and down another, or across a stream and back again, or through a tunnel of dark and confused and smoky noises back to the level where we plunged into chaos; but ever we have been traveling onward.

All these achievements of a past century sprang from a seed called " faith " worked out by nameless human tools in the hands of a divine destiny. It was a faith that refused to be daunted, refused to be stalled, refused to be discouraged, refused to be obstructed by the impossible; that tore up mountains and cast them in the midst of the sea; that walked on water and leaped torrents; that multiplied values more than the baskets of bread and fishes in ancient miracle; that traversed the waves of the sea and put

bridles in " leviathan's jaws " and rode, when it could not conquer him; that used the stars and the sea as its guides in mathematical and surveyor's charts.

With that record of a century behind, it is hard to be a pessimist for the century ahead. We need such assurance to buttress our faith; for steam on rails was about to plunge into its darkest period of a vulture era.

Chapter XI

The Twins Have Double Convulsions 1837–1839

THE panic of 1837 comes into the railroad story so often that it must be explained.

At mention of the word " panic," the average hurrying citizen throws up his hands as though to jump off a diving board and not quite sure when he went off the deep end whether he would come up. As an excuse he takes refuge in some such platitude as " no one can ever foretell "; or " things over which we have no control "; or " oh — high finance — skullduggery — manipulation." Whereas, if we hadn't learned lessons from the past, the race would still be on a level with the child mind of the Australian bushman or the African negroid. Panics are no harder to understand than are any child's " sums " in addition and subtraction.

The War of 1812 had hampered shipping from all ports — hampered it by danger of attack, by blockades, by jams of freight, by uncertainty as to prices in world markets and still greater uncertainty as to ability of European and Asiatic ports to pay Americans back in gold.

When the war was over and peace established, instead of a slump there came a wild rebound. Ports opened both in the United States and in Europe. Europe, bare of supplies as Mother Hubbard's cupboard of a bone, bought American exports hungrily, greedily, avidly — for Europe was bare as the result of the Napoleonic wars.

The reaction in America with railroads, canal boats, schooners going like shuttles to and from the West brought the most prosperous era, brief as it was sudden, the new Republic had ever known.

Farmers were prosperous from high prices and access to foreign markets. Merchants were prosperous from sales to farmers and to Europe. Transportation lines were prosperous and worked overtime. Unemployment, there was none. Plantations in the South doubled, trebled, quadrupled the acres planted to cotton. With access to the West opened by canal boat, steam on water and steam on rail, people flocked to the Middle West — the Far West of those days — to grab the rich land that did not need the rooting out of hardwood forests before a plow could turn a furrow.

I quote the general conditions from an old French analysis of the period from 1818 to 1837. An account of the times in really scientific and financial terms may be found in the famous Bullion Report of the period, when England assembled every known commercial expert to give advice on how to get her trade back on a gold basis; for trade had to rest on a gold basis. It had to use gold and gold only for international commerce, because gold was the only currency acceptable to all nations. India and China particularly — lands of silks and spices and teas — would have nothing to do with paper money. They wanted payment in gold; and there did not seem to be enough gold to cover the needs of trade. So I quote the old French report: "Wonderful prosperity; enormous

quantities of paper money issued by public and private banks to cover the needs of expanding trade . . . a rise in prices of everything from lands and houses and wages to foods and merchandise and clothing . . . wild speculation in sound and unsound ventures using chiefly paper currency, notes, bonds; aims to grow rich at once . . . craving for luxuries unknown before . . . enormous rise in loans, discounted notes [many of which were worthless with no security beneath them] . . . brokers' gambling speculations . . . too many banks with no real gold reserves in their vaults" which loaned to favored customers with "no real security for the loans . . . everybody in debt or on credit." Taxes for public improvements in roads, in rails, in canals had increased enormously.

It is nonsense to say the wise heads of that period did not foresee the danger signals. Prosperity running faster than cash profits — then the jolt down — a temporary halt — then a wild avalanche of selling good and bad in a frenzy. Wise men all over the world did foresee. Chinese and Japanese and Oriental merchants now refused to sell to Boston merchants except for payment in gold — no more furs from America in trade, no more hardware from England in trade for silks and teas and spices — gold, please, Mr. Ame-l-ican man, for us!

Wise heads in America saw what was coming, though they did not shout nor advertise it. That would have brought them down in the universal wreckage — caught like rats in the ship through

whose hull they had gnawed the holes to let in the swamping seas. I am sorry to say some of these men either lied about things or deceived themselves.

The great Biddle banking houses of Philadelphia and Baltimore paid the Southern cotton planters in banknotes, but when they resold that cotton in Europe they took mighty good care to exact payment in gold; for whatever comes — gold is gold and interchangeable at all times in all nations for what you must buy. But what would happen when all these cotton planters, all these builders in the cities, all these speculators in land, all these workmen with savings in banks — demanded gold at the banks for the paper notes swelling their pockets? On with the dance! Bankers dared not pause to ask themselves that question. They probably hoped to get enough gold piled up in their vaults before the crash came, to meet the demand when it did come; and it came so gradually that few realized, when the bolt crashed from the blue in 1837–39, what had brought it so suddenly. Why, the country was so blessedly prosperous the Federal debt had been extinguished before 1836. There was a perfect riot to help spend the surplus. As President Harrison said many years later, " God help the surplus." Every thief in the land was after it with legal plans to spend — spend — spend. Public works would give employment. People employed would have money to spend. On with the dance; on with the giddy whirl to the edge of the precipice — " eat, drink, and be merry for to-morrow we die."

And yet a schoolboy could now read the steps in this Death Dance of Folly. Biddle had accumulated a fortune of fifteen millions, equal to John Jacob Astor's or Vanderbilt's, from 1818 to 1837. He tried in vain to tie up all the banks of the South in a chain that would hold if only the weak links did not break under the strain, but the weak link in that chain showed when people presented those paper bills at the cashiers' wickets — they wanted gold, not explanations. Explanations would not pay debts. Yet the chain of rail banks in the South did hold the Southern rails up as soundly as any rails from Boston, New York, Philadelphia.

Now follow the steps of the Death Dance! They are like the whirl of a dervish till he falls senseless, and then gets up with the headache of the morning after.

When China and India — which have always hoarded silver and gold in palace chests, not banks — demanded gold and American and European traders could not deliver gold, the Orient ceased buying. You remember how that ruined John Jacob Astor's Pacific Coast fur project.

Results — American merchants could not sell to Asia.
Foreign trade slackened, dulled, stalled, stopped.
Shipping slackened, dulled, stalled, stopped.
People employed in shipping began to

find themselves out of work and couldn't buy from home merchants what they usually bought.

But there still remained the markets of Europe in need of all America had to sell; but Europe could buy only up to the limit for which she could pay; and when America began to demand payment in gold, with Europe gradually getting back to where she could supply herself or do without, Europe ceased buying so wildly.

The results — need they be given? It was the same as in the case of Asia multiplied a thousandfold in the backwash of a tidal wave. Wheat didn't fall to thirty and forty cents as it did in later panics — it fell so low it had to be fed to the pigs. Cotton didn't fall. It smashed — smashed in spots, for highest grades, from sixty to five cents. Planters, who had gone in debt to expand their cotton plantations, rushed to the banks to exchange paper money for gold to pay their debts, and couldn't get it — found there wasn't any gold; and while the paper currency was not worth twenty cents on the dollar, they were in debt at one hundred cents on the gold dollar. It was the same in every line of life where people with paper currency in their pockets and debts on their backs rushed in packs to get gold and found their paper money worth only twenty cents on the dollar while their debts pressed them at full value plus interest rates at from eight to twenty per cent.

As Solomon said — there is no new thing under the

sun! America went through the same cycle after the Great War. All that prevented the young American Republic coming to the hunger line in 1837–39, as Europe came, was the fact that America was still a land of farms, furs, mines, forests, fisheries, and though a man might not have a dime to rub against another dime for a year — he could fill his stomach with his own pork and beef and poultry and wheat; he could clothe himself in fur, coon caps, buckskin moccasins, wool woven at home, flax grown on his own land; he could keep himself warm with his own wood; he could fish; he could hunt; he could trap and keep very comfortably alive, though the windows in his cabin in the wilderness frontier might be only skin parchment and the door hinges of buckskin leather.

As for the towns, I quote again from old records: ". . . money could not be obtained on any security. Those who had gold hoarded it. Runs on banks were universal. People lacked food. Streets were deserted. Docks rotted. Theaters and concert halls were empty. Rents tumbled from $1,200 to $450. Land could not be sold at any price," farm lands least of all. People abandoned their Eastern homes plastered with debts for " the trackless forests and plains of the West." Banks were loaded with " foolish land speculations, which they could not sell." " Tax collectors refused to take payment in paper currency and demanded gold." I wish there were records of the banks that failed, or staggered to their knees, at this period; but there are none — at least, all existing records are

more or less in dispute. Federal supervision was still very loose, and the conditions were so bad, Federal supervision may have worn blinders. The whole truth might have counteracted the remedy and scared the patient to death and the doctor out of the house.

Of course, the Federal government came to the rescue and rushed an agent to London to raise gold on American public and private shares in banks, in shipping, in lands, in rails; so out of a great evil came a great good. European investors began financing the growth of America. But while this stopped the first crash like a breakwater against a tidal wave, or a lightning conductor against a bolt that sets a house on fire, on such foreign loans interest had to be paid; this brought the second jolt, in 1839, and the panics of this era became known as " twin convulsions." The signs of the second convulsion came in symptoms of which wise heads take nervous cognizance to-day — the banks of England and France raised their rates and gold began dribbling away to Europe in small obscure monthly shipments; and of course, people proved then as they do now — that was a good thing. Too much gold meant too much inflation, money too easy, speculation, rash ventures; but the wiseacres knew that underneath was the dangerous undertow that might suck to ruin. If the gold went off on a gay excursion to Europe and Asia, and the public in America suddenly in mob fury — as mobs are apt to act — wanted gold cash for paper money, what is called a panic would occur, though you might call

the panic by some more sweet-smelling name — a readjustment, a healthy reaction, a correction in a crazy market.

Fortunately the infants survived and became so sturdy and kicking in another ten years that it is a question if farmers and shippers and merchants were ever as soundly prosperous as they were up to 1873, until the great prosperity of the World War followed by the same "twin panic" as rocked us just before and a few years after the war.

It is almost sardonic to recall that a century ago every one had proved we were so prosperous as to be panic-proof and fool-proof. It is true the banks thought they had an absolutely fool-proof machine, mechanically to supply all credit needed. But behind every machine is — man; and man is not yet fool-proof.

A country can no more pull itself up by its own boot straps than a man can.

What rescued from the ruin of the twin panics of 1837 and 1839 was one of those curious parallels in a lot of simultaneous movements which makes men say "America traveled in luck"; or, a Divine Destiny foreordained by a Divine Architect; or Fate!

There has never been a panic in America from 1837 to 1921–22, which has not been helped unexpectedly by a huge crop — corn or wheat — which brought back gold from the rest of the world.

The Mexican War of 1846–48 left the United States with the new cotton territory of Texas, the mineral and wool lands of New Mexico and Arizona

and California. Why should the planter of the Southeastern States go staggering along under paper debts, which he could not pay in gold, when he could trek over the Blue Ridge or round the coast by schooner to a new cotton field where millions of acres of land were for sale at fifty cents an acre? So he pulled up his home roots and sold his slaves and trekked and laid the foundations of the very best American pioneer stock in blood and brains, in these new territories. That is why you can find in those states to-day a stock of purer American blood than is to be found in many industrial Eastern centers. You detect it in the broad Southern drawl of the long English *a's*, in the slightly slurred *r's*, in the never slurred *g's*, in the never omitted *h's* of the true Englishman as distinguished from the Cockney. You get it in the casual, almost slow, physical movements of steady nerves concealing a reticent, almost lightning-quick mind — the man who doesn't brag, but acts and lets results speak. You get it in the tall, almost raw-boned, magnificent physique.

And right in those very years gold was discovered in California. Gold, of all things on earth, which the American Treasury and the American banks needed most to get back on their feet — gold in such quantities, gold in free nuggets, placer gold — the prospect went to men's heads and drove them mad. The trek became a stampede, peopling sections that might otherwise have lain dormant for another century; and those people called for steam rails, howled for steam rails, and forced steam rails as a flag of progress from

Atlantic to Pacific. Within a few years, the Pacific Coast had three hundred thousand people from the East and Middle West, all gold-mad.

But this was not all. The Northern rails to the Alleghanies had crossed the ridge of mountains, and the great rivers west of the ridge were covered with steam river boats, flat boats, tugs, barges. Thither the people of the North Atlantic States hied them from the hard conditions hounding them in the panic of 1837–39. Why dig out tree roots and build stone walls from the rocks heaved up in New England farms by frost every spring when here, west of the mountains, were free lands or lands for sale at a dollar and a quarter an acre with access to market by rail and water? This movement, too, became a stampede that peopled the territory from Ohio to Iowa, from Michigan to Tennessee — that sent the population of these districts up to more than the whole Republic had been in 1800; and this population not only revived the languishing trade of Atlantic cities by buying from their merchants but it revived their foreign trade by shipping out farm products.

But this was not the last parallel movement so baffling to any rational explanation of human history. When the War of 1812 stopped, Astor had been driven off the Pacific Coast as a trader. If he had been defeated in the war, he could have received back by treaty all his possessions; but he was not defeated. He was jockeyed out of his possessions by his poltroon managers at Astoria, selling him out to Montreal traders; and Oregon was left in joint occupancy to be

The discovery of gold in California and the subsequent migrations westward provided not only a tremendous incentive for the development of steam rails but the means by which the young republic financed them.

settled later. In the interval, England, under the advice of a foolish, light-headed young man — Gordon of the Aberdeen family — had decided that territory was not worth the fight for it, not worth what she might have to sacrifice in trade profits with American Atlantic cities; the Hudson's Bay Company had given orders to its fur traders in Oregon to " trap it out " and move up to British Columbia. Dr. Whitman has been given credit for " saving Oregon " by his famous midwinter ride. He did; but not as a missionary. It was by rousing the East to the value of Oregon as a territory for the United States, to hold what she owned by right of discovery. As a missionary, Dr. Whitman, one of the noblest, most patriotic souls that ever lived, had failed, as had all the early missionaries to Oregon. The mission board was on the verge of closing down every mission in Oregon; but a fight will always rouse lethargic people. If you want to make a sensible dog drop a good meaty bone, show him his reflection in water. Dr. Whitman did arouse the East to the value of Oregon, and was followed back by colonists in trains of thousands, on horseback, in wagons, which now crossed the Rockies for the first time, on foot, with cattle, poultry, household possessions, which they flung to the side of the trail as useless excessive baggage — pianos, parlor organs, Chippendales, rockers, cradles, what nots. People who had pulled up stakes to trek to Ohio and Illinois and Indiana, now pulled up stakes to trek to Oregon — poor things! — for many of them left their bones to bleach on the trail where monuments mark

their courage if not their discretion. The world knows the sad tragic drop curtain of this movement — but only drop curtain to the final act of triumph. The Indian did not object to Whitman — the missionary; but he did object to Whitman — the colonizer; and the Cayuse tribe massacred him and his missionary band with a cruel ferocity never exceeded in frontier life.

Again, if you want to consecrate a flag, dye it in blood! Oregon had come in as a territory before the Mexican War. It could not be left another year to sink or swim in the backwater of diplomacy; for troops must be sent to quell those triumphant Indian tribes now elated to madness by the massacres of white missionary colonists; so again out of a great tragedy a great good emerged.

Now we go back to the story of steam's flag of progress westward. So far it had rested on the ridge of its triumph: the Great Lakes, the Alleghanies, the gaps of the Blue Ridge and the Cumberlands. We have seen how the twin panics of 1837 and 1839 kicked it over the pausing place willy-nilly. Curious, too, and utterly contradictory. Humanly speaking, one would have said those twin panics would have set rails back a quarter century, until the country got its second wind; but they didn't. They kicked steam on rails forward, just as Necessity gives us the lifting kick when we most need it; but he who — Nietzschean fashion — can call all these parallel concurrent movements westward by the word "chance," has more faith in chance than any one cares to gamble on in

private life. We may think we do it; but do we? We may say Chance — Luck — Good Dame Fortune did it; but why did all chances lead to the same grand objective — the drop curtain of triumph on the final act, the advance to the Pacific?

Chapter XII
Way Down South. 1830–1850

HOW Steam proceeded across the continent with her flag of progress to the Eldorado of hopes west and yet farther west — serene, unobstructed, sure of her course as a migrating bird over chartless seas — would be an interesting narrative. For some reason that is not the way progress proceeds. Struggle must do something for the good of the human race, or we wouldn't have to fight onward so hard in a zigzag way. Despite all triumph to rear, progress is baffled and plundered; now down in the slime of cesspool mires; now up though stained; now blocked and stripped naked by thieves and left for dead; only to rise again and again in fresh triumph; and being the story of humans, that is the record of rails.

How the South lagged on steam owing to four S's — slaves, schooners, the shortness of her swift rivers from the mountains, and swamps — has been told; but the South was equally indifferent to canals, though canals didn't freeze up in the South as they did in the North. A glance at a map of the period will show that, except for the Chesapeake region, Southern canals were almost negligible; and her rails, by 1840, ran only from North Carolina across Virginia to the Chesapeake, from Charleston across South Carolina to the mountains, and from Savannah across Georgia to the mountains. In the North, rails were becoming loops of a shuttle weaving a new pattern on the face of the earth. This is the more surprising

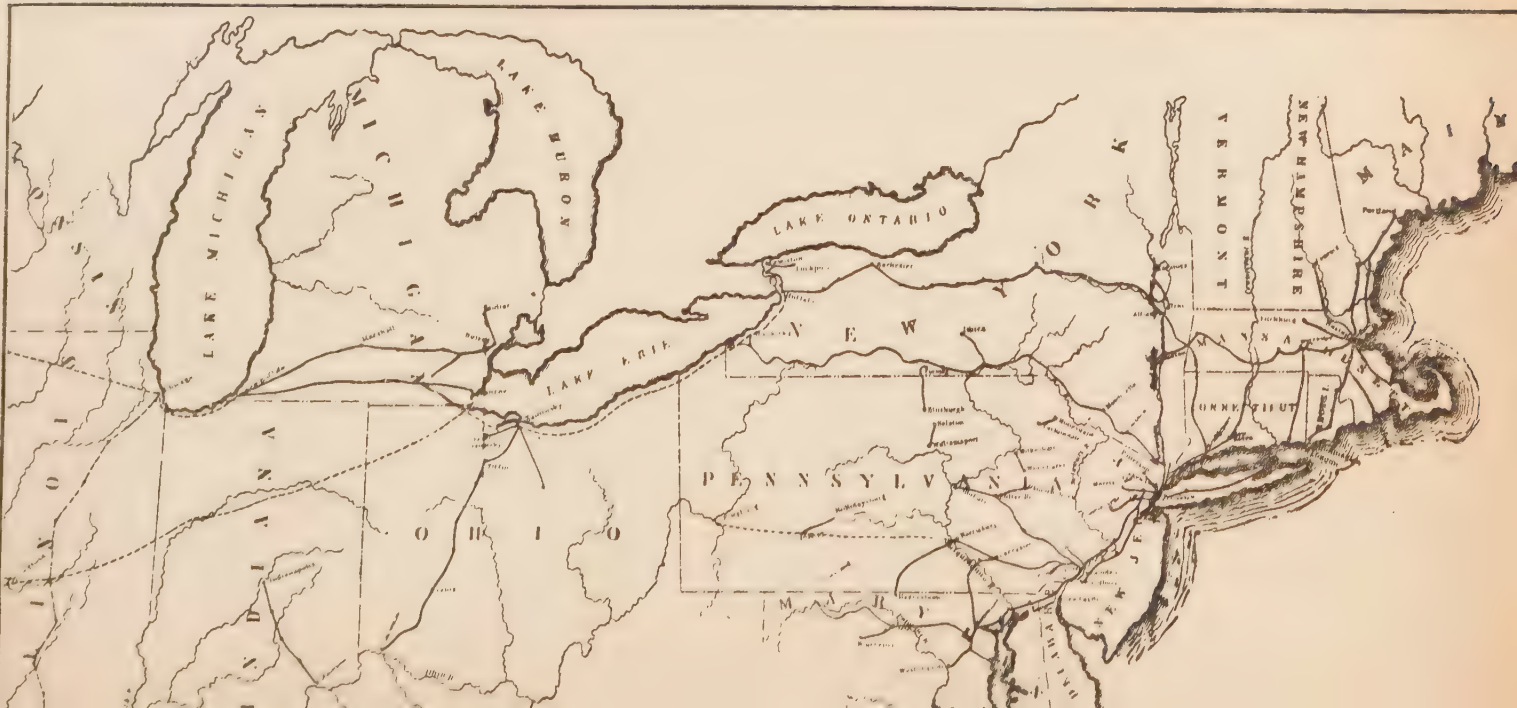
as the South had not to fight the truculent opposition besetting every mile of the way for rails in the North. She had not to fight river boat companies, for most of the planters used their own sloops or schooners. Laboring teamsters gave her no trouble except in two towns, for the laborers were black slaves owned by her planters. As for turnpikes, south of the Chesapeake there were next to none; those that did exist were notorious for their badness. A joke has come down to us — in Georgia the real first inspiration for rails as carriers is said to have resulted from the " bogging " of machinery drawn by an ox-team going in from Augusta to Athens for a cotton mill. Both the oxen and the steam boiler for the mill sank so deeply in the mud of a main highway that the owners had to wait until midsummer dried the bog before they could dig out their machinery; and the idea hit the dealers, who had lost by delay, that if steam were good for a cotton mill, why wouldn't it be better for hauling machinery in and cotton out?

The one place profiting by the South's laggard pace in rails was the little hillside frontier town, where the shallowing rivers stopped sloops and the steep grade turned common roads to Indian bridle paths where slave labor was not dependable. The slave was either afraid for his scalp from raiding Cherokees, Creeks, Chickasaws, and Choctaws along one thousand miles of the trail, or he might risk his scalp in the dive of a runaway to Indian life — of which you will find many mixed blood examples in fur trade annals. They were bad mixtures of blood,

too, and gave the fur traders some treacherous enemies who had to be bought off. Such little hillside towns sprang to life in the upland plateaus now famous for their orchards, but then equally infamous as the lawless jumping-off places into the wilderness frontier. These bartered furs from the Indians at extortionate advance prices for firearms, making every advance through the Blue Ridge and Cumberlands "a bloody ground"; and they prospered, these towns. What did they want of rails which would take their trade down to the Mississippi, or out to Charleston and Atlanta for shipment to Europe by way of Baltimore? John Jacob Astor, before coming to New York, had been a peddler of trade goods to these hillside towns for furs to be shipped out through Baltimore.

The Blue Ridge and the Cumberlands formed a mountain wall that at first frightened the South away from rails. There was but a single gap, and the Baltimore and Ohio had got across first to the great river highway of the Middle West. Besides, the South had no rich merchants and bankers, like Boston and Philadelphia and New York, to back rail projects. To get across from Charleston, South Carolina, to the Mississippi, required the permission and coöperation of four different states, and the state laws were just about as varied and inconsistent as in the North. Rails were regarded merely as links over humps of hills or between rivers — a necessary evil.

Yet the South had begun very bravely at Charleston. What wakened her up was that belt between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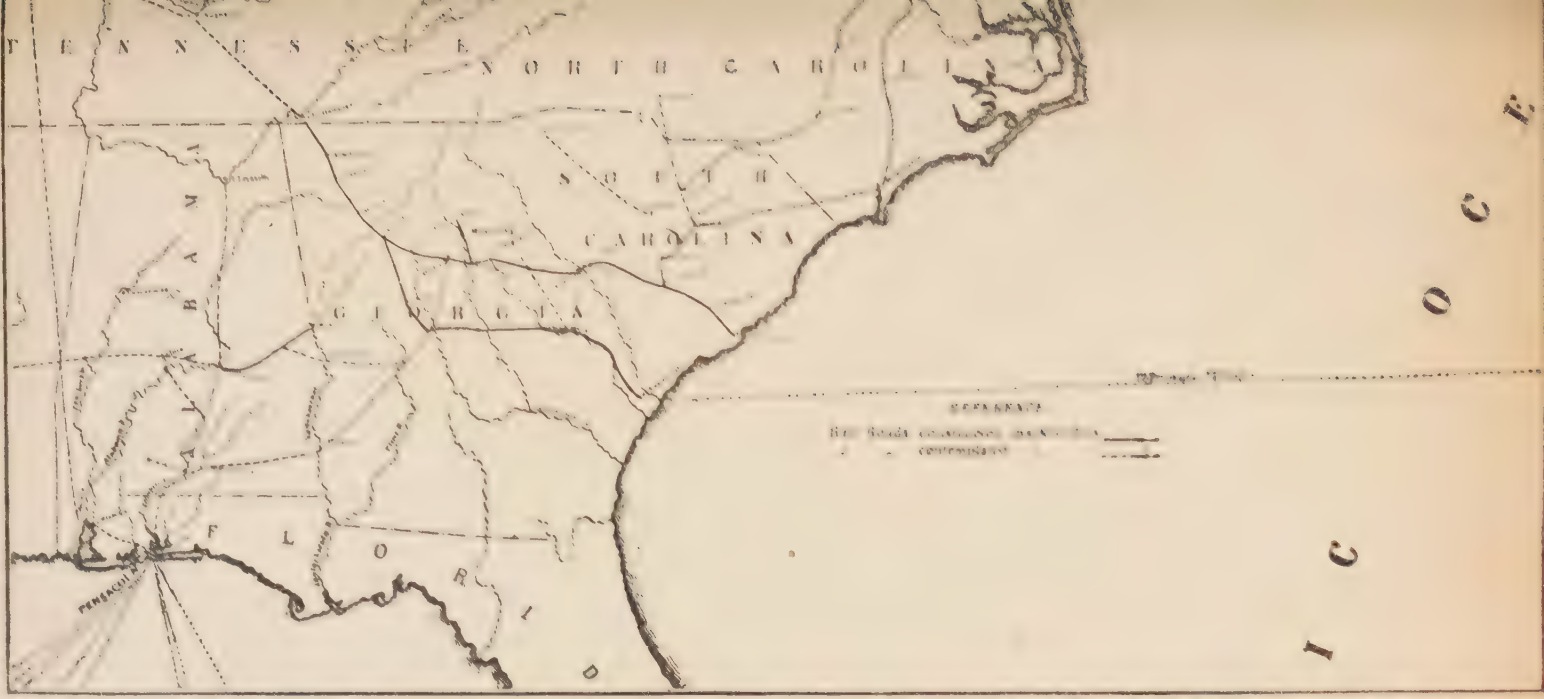


This map ordered by the House of Representatives in 1840 shows the railroads constructed and contemplated at that time and sets forth graphically the progress of two decades. At this period the South still lagged far behind the North in the development of her railroads.

the hill towns and Baltimore. Wholesale trade was Charleston's life blood, and her Western trade was ebbing away. Subscription books had been opened in 1828 to cover the costs of a survey between Charleston and Augusta. Then there were troubles laying the roadbed. Slaves were busy on the plantations and white labor from the North could not stand up to the job in heat and malaria. In summer heat, the poor whites simply scattered; in winter, they had to be regathered. In 1833, 136 miles had been completed, with Hamburg as the terminus. The engineer, Horatio Allen of Baltimore, could boast this was the longest continuous rail in the world at the time, though its seven tiny engines and forty-six cars, for both passengers and freight, were so distrusted by its backers that sails were kept on hand as a possible help on flats, gravity would work down grade, and horses kept ready for a pull up, if steam failed. The rail company was not very keen for freight up; it preferred freight downhill. A watchman and two negroes patrolled every four miles to clear the tracks of falling trees, to sweep the roadbed clean with hickory branches, and feed cordwood into the ferocious fiery maw of the new "wonder devil on wheels." The "devil," it seemed, had an awful thirst; one negro was to water it while the other fired up. Though rates were the highest anywhere in the United States at the time, they were so much cheaper than paddle boats or sloops that "a poor man could not afford to walk." Then the planters wakened to the fact they could send in slaves "by freight" cheaper by steam

rails than on water. Whether sent by freight weight, passenger express, or mile passenger rate — is not recorded. And Charleston was pleased! Receipts were fifty-eight dollars a day. By 1834, they were one thousand dollars a day, and in ten more years the Charleston road could pay ten per cent dividends.

By 1833 there were ambitious schemes to push across to Tennessee; for Georgia was now planning rails along a trail from Augusta to Tennessee, if not up through Louisville to Cincinnati. The two rails — the Charleston and the new Georgia line — were going to connect at Augusta, but Augusta forbade their laying tracks within a mile of each other. The Cumberland Gap seemed the only gate through the mountain wall to the west and north; but right in that gap converged the boundaries of three states, Virginia, Kentucky, Tennessee. The estimated costs to get through that gap up to Cincinnati were almost twelve million dollars, of which two millions were to be borrowed from England. The states generously exempted forever from taxation the stock, dividends, and property, but the lines must be subject to the laws in each state; and there came the inevitable snarl and delays. Cincinnati and Louisville were jockeying to become the northern terminus. Four millions were called for the Charleston to Cincinnati road before 1837; business men along the line of survey paid in five-dollar installments — but surveys were proving that the real cost from Charleston to Cincinnati would be nearer nineteen millions than twelve. The total was staggering. It would be in our day in a panic

year; and the first of the Twin Panics of 1837–39 was about to break.

Now recall Biddle's plan to tie up the banks in chains, each to carry other and rush to the aid of a link giving under the strain. Now there came in, innocently enough as all evils slip in, the device known as "Interlocking Directorates." Don't shy at the name! It was not the cunning device of a later day. It began almost a century ago and was simple enough. No man could foresee the future evil to spring from it. A rail bank was to be organized. The shareholders of the railroads were to buy eight millions of the bank stock at twelve-fifty a share. Such rail shareholders should be holders of the bank stock at par. In other words, they got one hundred dollars of bank stock — if the bank survived — for $12.50; but in five-dollar subscriptions, as they could raise the money, they were also paying cash for one hundred dollars of rail stock, or $112.50 for two hundred dollars of bank and rail stock — if both bank and rail survived the shock of 1837–39. Whether the $87.50 was to be regarded as "water," I am not wise enough to say. One subordinate rail taken into the new arrangement of rail and bank could pay ten per cent. Others could not and never did pay a cent of dividends, and one does not to this day. I suppose if you chanced to hold the sound ten per cent rail, you might be accused of holding $87.50 bank stock for which you had never paid; but if you chanced to hold a one hundred-dollar rail that never paid a dividend, you would not object to holding $87.50 of "watered stock" to make up that loss.

The system was ingenious to avert ruin in time of terrible strain. The bank was not to be responsible for the debts of the road, but the road was to be responsible for the debts of the bank; for the banks were to put up that extra eight millions needed. North Carolina and Tennessee came forward with charters for the banks, but again Kentucky balked. Into this new combination went many little rails whose names we may forget. They have long since been absorbed in such lines as the Southern Railroad, the Atlantic Coast Line, the Georgia lines, the Louisville-Nashville, not links in a continuous chain across the continent, but evidence again of steam versus water — steel beat water in the worst rail era ever known in the United States; steel beat water, though the planters' sloops employed slave labor.

And then cotton prices melted like a snowball in the sun. Planters rushed their idle slaves to work on the Louisville, Charleston, Cincinnati line. Subscriptions had to be called in cash — hard, cold cash; and cash could not be paid, because it didn't exist. The great crash of 1839 was upon the South in an avalanche. Desperate stockholders besought the rails to pay back the installments already subscribed. The states which had advanced small loans begged the same. Share after share not paid in full was forfeited. The public couldn't understand why a rail line with increasing traffic failed to show profits and dividends. Of course, construction in such a period had to be cheap. Poor piles in swamp areas, bridges that swayed dizzily over dizzier depths, rickety cars on a rough

roadbed, tiny engines that had to do the best they could with a light load up and a heavy load down — equipment that cost more in repairs than it had originally — all had to be replaced as they wore out. Yet at the very nadir of those woes, the forties, the South had in branches and main lines almost a quarter of all the nine thousand miles in the United States; and in another ten years, on towards the sixties, had almost twelve thousand of the total thirty thousand miles.

There is no record to show whether all the banks in the Biddle chain system survived the strain. Enough did survive " to put through " the South Atlantic rail projects, of which Georgia easily led; but a great deal of Georgia's profits went across South Carolina and built up Charleston rather than Savannah. Neither is there any record of the pay planters took for rushing slave labor to the rescue when cotton crashed — probably credit for the subscriptions they could no longer pay, or " watered stock." The Biddles and the Federal government really saved the South at this time by pledging stocks and bonds to English bankers for loans of gold. It is well to keep this in mind. It explains England's sympathy with the South in the Civil War. That may have been another " sin of the banks " — in war, but it saved the South before the Civil War from prostrating ruin. Nevertheless, chain banks, linked up to chain roads, risked terrible dangers which came knocking at the doors of Southern states. It was really the beginning of the Southern states repudiating bonds held by foreigners which those states could not pay after their defeat. And

we must not forget that in the fifties, England herself was engaged in the Crimean War. Interest in gold, she exacted from the borrowing Southern banks; but she bought cotton at forty to sixty cents and wheat at from two to three dollars from the United States — and she paid in gold.

Chapter XIII
The Surging West. 1830–1860

WITH twin panics rocking the East to its foundations in 1837 and 1839, and a stampede of people from the Middle West to Oregon, California, and the newly acquired Southwest in 1848 and 1849, were not Indiana and Wisconsin and Michigan and Ohio depopulated?

If another parallel movement had not come in, they might have been drained of people and set back twenty years. It is these parallel movements westward that give one such a curious perspective of a Destiny bigger than any one nation, or any block of states, directing the affairs of the human race in all its long treks and zigzag wanderings.

Germany and Middle Europe were convulsed by revolutionary movements. What in the world had Europe to do with the United States? Throughout Europe the sons of the revolution for freedom were in collision with the iron hand of autocracy — czardom, imperialism, or any other name given the rulership of the many by the few for the benefit of the few. For the time being, the Iron Hand triumphed. As an immediate result, the restless peoples of Europe, who had flamed up from a thousand years of crushing burdens in taxes and wars, looked longingly to that one land whose ensign had stood for freedom from its birth. France had had freedom, but she had wavered after her revolution, run into riot, and crowned her leader — emperor. England had fought for freedom from the time of her Magna

Charta; but England staggered under her twin burdens, taxes for past wars and taxes for still greater wars to come.

But beyond the seas — there surely lay a land vast enough for every man, woman, and child to have elbow room, to own body and soul, and home to be earned by sweat of brow and brawn. Conditions could not be worse in that far land than in Europe, where people were not starving metaphorically and rhetorically but literally and physically. Mud huts, wandering mobs of the unemployed, ragged children, worn women, maimed soldier folk — all the aftermath of every war — were on every side in Europe and excited little comment because they had been the aftermath of every war for a thousand years. So there came to the shores of the United States in mounting floods, year by year for a full decade, nearly a million stolid Germans solid of body, feet planted on earth, muscles hardened by centuries of toil and weeding out of weaklings, the best class of thrifty farmers the world has ever known. These did not stay in the seaport cities of the Atlantic Coast. The only ones who paused in the cities were the bank and counting house clerks. Their names to-day are to be found in half the big banking and shipping and merchant houses of the United States. With Boston and New York and Philadelphia and Baltimore rails fighting for passenger traffic to the West, the crude rail highways, bad and primitive as they were, provided easy access to the Middle West. Many of these immigrants had brought a little

money. With that, they bought $1.25 lands — the government's upset price at the period — for seventy-five cents from the rough American pioneer now stampeding for the Northwest, the Southwest, and the land of gold — California. It is actually a fact of record that at this time three hundred acres of land along the Lake Shore of Chicago were offered a newcomer tenderfoot, a greenhorn immigrant with a tiny wad of cash, for sixteen cents an acre. The immigrant looked over that land. It seemed a wind-blown sand ridge. He had had enough of that sandy soil in Germany. Perhaps he saw the waves of Lake Michigan sweep over the sand in storm. He grunted, held tight to his little wad of cash, and passed on West, while no doubt the eager seller tucked his tongue in his cheek and groomed himself for the next comer, hoping for "an easy mark." There was an expression in those days which has come down to us — "easy as taking candy from a baby." The German immigrant was not in that category. He had earned his little wad too hard. A Celtic ancestor of my own came over at that period. He had four thousand dollars. It was regarded as a colossal sum of ready money.

How those settlers succeeded is one of the most stirring stories in the lives of simply unbeatable pioneers. They couldn't afford lumber for board or log cabins. Only Michigan and Wisconsin had lumber for such houses, which explains why so many Germans surged like waves of a human sea up into those areas. The roads of Illinois, Indiana, Ohio, Iowa were such sloughs of bottomless bog, settlers couldn't haul

In the middle of the nineteenth century crude rail highways provided comparatively easy access to the Middle West. Beyond, however, in the Far West the immigrant had to travel by stage coach and covered wagon which were constantly menaced by Indian tribes.

lumber out to homesteads. Again it is a matter of record, a wagon sunk in the middle of what is now a Chicago hub, near the Sherman Hotel, had a sign stuck up as warning to other drivers — "No bottom here." I could tell the story of a dozen of these settlers, but will condense all in one synthetic picture. The small capital left from passage out seldom exceeded a few dollars. If the immigrant was short of that, he camped in shanty along the shore of waterfront towns like Cincinnati, or Cleveland, or St. Louis, or Chicago and earned enough as teamster, longshoreman, roust-about to move on. Reinforced with ready money, he now bought a team, usually of oxen — their broad hoofs would not sink in mud — sometimes a docile cow for milk; a wagon; a few bags of flour, the bags to be used as summer underwear, of which many a rude frontier joke was cracked about brands of flour stamped in hot sweaty days on the wearer. (Nor are these jokes apocryphal. I have known nuns of the frontier Northwest and Southwest who confessed smilingly to the same experience in warm weather. Their names might be Sister Theresa, Evangeline, Evalina; but stamped on their shoulders after a sweaty hot day would be some patented flour or bakeshop bread.) He also bought some oats and wheat and root seeds; not always a plow, for he could rig up a wooden one for a year's use; some pigs and chickens; an axe, a spade, a mallet, a crowbar, all the powder and ball he could afford for the old musket, a tented canvas to house the wagon over till he could get his first house and stable up. This made up

the first equipment. The first house was of tough sod with fireplace for heat, or outside bake oven for cooking. The window holes had parchment panes. The door hinges were straps of leather. The first floor was usually hard tramped earth. A ditch outside kept this dry by drainage. But the roof! Sod on shrub branches, or such poles as the immigrant could cut from river lands. For such usage, the early rail right of way through these states had a rule that " taking wasn't stealing " — even if the cordwood piles for engine fuel showed such surprising shrinkage after a dark night that the fireman uttered words heated as his own hotbox furnace. Over these saplings was spread more sod at right angles to the first layer; and all cracks were plastered with mud. Where the sod was thin, crumbly, dry, hay was used as a pack; but this required a veritable mud pie of the sticky soil plastered two feet deep to protect from chimney sparks. Enough to say that, unless rain came in a deluge, the house was damp-proof and warm as a bear's winter cave.

Pioneer preachers in those days — to quote one record — used to say they would have " to stop stealing wood or stop preaching "; but Monday would find them down on the government land, or near the railroad wood pile " borrowing wood for the winter roof." When sloughs were impassable for oxen, men " just pulled off shoes, rolled up breeches and waded."

In such arduous homesteading, boots, socks, clothing wore to tatters. The immigrant trapped rabbits

for good leggings in cold weather and a fine stew for the cook pot, and muskrats which he could trade at the nearest post for more ammunition or at the mill for flour. In winter, he hunted. That gave more food, and buckskin for clothing. With abundant pasturage for his farm stock, with a soil easy to break, and at that time weedless, yielding a crop more or less the first year, he was in a position to erect his log cabin or plank house the next year. Planks could be hauled a long distance in winter by sleighs. And withal, keep in mind that he had lived these first years in quite as good estate as he could have in his old European home, with the advantage that he was working for himself now, not for a landlord, nor for taxes.

It was a marvelously heroic period; but it took terrible toll of human life in pioneer mothers hundreds of miles from medical aid in childbirth, and still more terrible toll of little children not born sturdy because their mothers had been overworked. If you doubt that, some day when you are motoring through the Middle West, pause and run through the little country graveyards. You will find in one family plot the first bride's age as twenty, or younger, the second wife's age twenty-two, and then possibly the third reaching full three score years and ten; for the hardships had lessened as the years went on. Infants' graves beside the first wives' graves tell the rest. Of life comforts as we know them, there were none. Sugar was maple sugar and barrel molasses from New Orleans. Tea was steeped willow leaves. Light was tallow candles. Wool and flax were woven for finer

clothing. Feather beds mountain high and billows deep were warm in winter, but a horror in the hot malarial summer.

But taxes and landlords were driving more than Germans from Europe. A succession of terrible potato famines added to Ireland's woes. Her population at this time fell almost three millions in a continuous stream of emigrants, of whom two millions came to the United States. These did not so readily drift to the homestead of the Middle West. Perhaps the years of almost slavery to soil had bred an antagonism deeper than consciousness. Where they did so drift, they conquered difficulties in leaps compared to the Germans' slow plodding; but they did drift to the new building of public highway, to artisan labor of the cities, and above all to rail construction from trackman to contractor and train hand, and later — rail superintendent and president. Recently some one went over the racial origin of some of the most highly paid rail presidents in the United States. Four out of six were descendants of these pioneers and began life as either train hands or track workers.

Thus from Europe came two of the most vital racial strains in American life — the stolid Saxon, the mercurial Celt. These took up the lands abandoned by the American pioneer trekking for the Far West and the opportunities which that restless pioneer too often failed to see lying at his own door because his eyes were dazzled and blinded by the glare and glamour of quick wealth from gold mines.

How was travel in those "good old days" before rails had reached the Middle West? How did it compare to the stagecoach and canal travel of the East? Again I could quote from many letters of the period; but I cite from only one, after steam had reached the Great Lakes and the Mississippi for water traffic. A banker from Buffalo wanted to go from Chicago to New Orleans in 1847. He gave his experiences

By covered wagon it took six months to cross from Missouri to the Pacific, a distance now crossed by rail in less than four days.

quite as a matter of course, all in the day's work, much as he wrote his bank report:

"I left Chicago on the twenty-first day of October in a stage coach for Peru, distance 100 miles. It was raining and the roads were very bad. During the afternoon the stage coach upset and we were all thrown in the water and mud. At night we stopped at a hotel, ten miles from Chicago. The next day the sun was shining, so we went on. After traveling two miles the coach upset again and rolled into the ditch. We then went on to Lockport and Joliet, 40 miles from Chicago. The stage traveled all night and when we arrived near Ottawa the coach capsized for the third time. This was at two o'clock at night. In the morning we arrived at Peru. We left Peru on Satur-

day morning for St. Louis, a distance of 300 miles, on the Steamboat *Timolien*. Everything went well that day until Sunday afternoon when the steamer struck a snag and sank in fifteen feet of water. The passengers and baggage were taken from the steamer by the Steamboat *Mall* before it sank. We sailed on calmly until Sunday night when the *Mall* struck a snag, but it did not sink. We arrived in St. Louis on Tuesday afternoon. We left St. Louis, Saturday, October thirtieth, for New Orleans on the Steamer *St. Joseph*. On Sunday morning the *St. Joseph* went on the rocks and remained there two days after which she was released and we arrived in New Orleans on November 9th."

Quite illuminating — isn't it? — and given in about as dry and unexaggerated a style as a banker could pen it.

Owing to the great fire, Chicago's evolution, between 1837 and 1839, from a village of 350 to a city of 1,470 with suburbs, is a bit difficult to set down in figures not open to dispute. At any rate, wages for rail highway workers were nineteen dollars a month, and the workers demanded eight drinks of whisky a day to keep on the grading job; and when the first locomotives came puffing over the grade, the engine had no cab, no whistle, no bell. It could just puff, like the fat lady, and keep on going. It puffed over what is now the Wabash. Before the Middle West struck her real rail pace, the Erie was using ticket punches for conductors and gongs on engines. Vanderbilt, to save time polishing brass engine rods, had ordered all locomotive bars painted black. He thought that

brass required too long "to groom the iron horse." Iron rails were replacing wood on the Erie. Those imported iron rails were costing the East two hundred eighteen dollars a ton, which explains the high cost per mile for early construction. Though iron rails bumped badly from worn ends and spread in heat and tore spikes from rotting ties, they outlasted the wooden rail, which split under the thin iron top strap. The Middle West could buy those iron straps as scrap for her first rails. "The snake-head strap" acted as it had in the East, only more so, owing to greater extremes of heat and cold. It coiled up through a coach and "bit a passenger's leg." Whether in the resulting accident or from blood poisoning, the passenger died. I do not find any record of lawsuit. The traveler was "a free pass dead head" relative of an official of the road. The Middle West could also buy cheap the light rattletrap coaches now being sold in the East as they were replaced by larger heavier coaches; but I do not find this helped very much; for one Michigan road was so poverty-stricken that all the office furniture — table, desks, chairs — had been seized and removed by a sheriff. When the annual meeting came round, president, vice-president, superintendent, and treasurer — whose duties must have been light — had either to sit on their thumbs or borrow chairs. A short while after that, the directors decided to sell the road at about half a million less than it had cost; and most of the people thought it the best bargain that could have been realized out of a very bad business. In 1847,

Illinois was glad to sell out for twenty-one thousand dollars about eighty-two miles of a railroad that had cost one million four hundred thousand dollars in ten years and had not income sufficient to pay repairs. The president of what is now the Chicago and North-Western used to sit in his office and also in the tower of his house and watch, through his marine glasses, for his trains to come smoking in over the flats. His little railroad ran only a few miles and seldom mustered more than two passengers trains and three freights a day; but it did do what few Western roads could do — it paid dividends of ten and eleven per cent; and that was a thing over which any marine telescope might swell with pride.

When an engine of twenty-five tons came with all the bloated, puffing self-importance of such achievement over iron rails to Chicago, an exuberant orator "orated" "There were giants in those days." There were; but as you look back — the human giant was a very much bigger one than the iron giant. He translated a sublime faith into a sublime reality. Is it ninety or a hundred thousand miles of rails that now radiate from Chicago? What matter? The total increases each year. Was Chicago's population three hundred fifty or fifteen hundred at the beginning of her rail era; was it thirty thousand when her first rails began to raise hopes of two hundred thousand in a half century? Again — what matter? With her suburbs, is she not to-day the third largest city in the world? What made her so? The grain of mustardseed that was faith. If you had suggested at that time that

Chicago might yet outstrip Boston, Baltimore, Philadelphia — yes, even St. Louis — people would have stared to see if you were an escaped lunatic. When Chicago enthusiasts first went to Boston and New York to try to raise capital to build railroads, they were met with the scant courtesy of "Yes, road, to begin at Chicago and end where — to jump off into nowhere"; and capital's lid was clamped down tight.

The difficulty from the beginning was that the Middle West had no reservoirs of real hard cold cash, such as New York, Boston, Philadelphia, and Baltimore supplied for the East. The epidemics to build roads had been just as mad from 1825 as in the East. Charters to build poured from state and territorial legislatures but died before they could be hatched into facts, like the eggs of poor fish strangled in a dried river bed. People ask why the Middle West plunged so crazily into state rails from 1825 to 1840. Because there was no other way to get them. Immigration was rushing in. On land two hundred miles from waterfront, it didn't pay to turn a furrow. What was grown could not be sent to market. Such areas were termed "refuse lands" — worthless, whether the newcomer had paid a dollar and a quarter as he did to the government, or seventy-five cents as he did to people moving away to California and Oregon, or sixteen cents as asked for that three hundred acres in Chicago. Acts were piled on acts, laws on laws, to encourage building — exemption from taxation forever, free right of way, state aid — still no rails went ahead across "the refuse lands." Land

grants had been made from 1803 for ferries, for bridges, for turnpikes in the East; but of what use were land grants in the Middle West, where nobody would buy them but poor German immigrants, and they promptly threw them up and went into Wisconsin and Michigan, where lake vessels gave open highway to Eastern markets? Horse roads in Indiana were girth deep mud holes in spring and fall. By the time summer or winter had improved the road, the farmer was busy on his summer work, or the Eastern market was already glutted, or the lake route had frozen up. Illinois roads were a crisscross of Indian trails usable only for canoes from head stream to head stream.

One could pick at random any one of the great belt lines radiating from Chicago — the Chicago and Alton, Chicago, Burlington and Quincy, Chicago, Minneapolis and St. Paul, the Chicago and North-Western, Chicago and Rock Island, Illinois Central; and by following its story link by link get the romance of a forward march over difficulties that would be typical of all. Let us take one or two, like the Illinois Central, round whose story begins the most hotly disputed of all fights over Western roads — Land Grants.

PART IV

The Land Grant Era

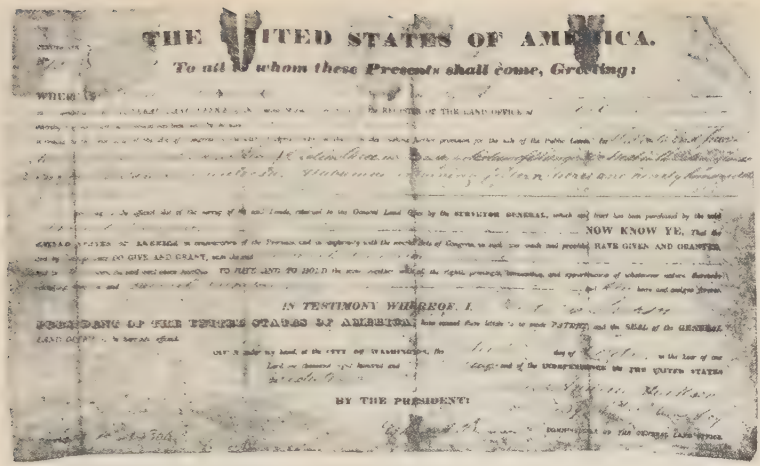
Chapter XIV
The Land Grant. 1830–1860

THE Middle Western states had been implored to build roads — get any kind of rails down at any cost from 1830 to 1856. They did; and the cost came so high it almost bankrupted half a dozen new states and territories. Then came the aid of the Federal government assigning land grants to private companies which would go ahead; and prices for farm output soared because grain could reach Europe, when Europe could and would pay any price for grain. More than four hundred rail charters were issued for lines in the Middle West at this period. When prices fell, there was, of course, another and sadder story. In prosperous times, the rails had been hounded for lower rates because they were prosperous. When times became appallingly bad, the rails were again hounded for lower rates because the shippers needed lower rates. Perhaps we should not blame either side in this eternal seesaw. When the spurs of Necessity dig deep in the flanks of a broncho, he is apt to buck pretty violently.

Little more than one hundred miles of rails were in running order south, west, or north of Chicago by the beginning of 1851; and these were what are now known as the Chicago and North-Western forty-two miles, the Wabash forty-five miles, and the Burlington eleven miles. What was later called the Illinois Central had eight miles of grading embankment by 1840. Not a rail had been completed through Illinois

from the east. There were branch lines in Michigan, of which one paid, one didn't, another was in the hands of the sheriff. Indiana, Michigan, Illinois had all tried out state construction of rails as common highway. Results: Indiana had a state debt of fifteen millions selling at twenty cents on the dollar; Illinois, a state debt of over seventeen millions selling at eighteen cents on the dollar; Michigan, a state debt of more than five millions selling at twenty cents on the dollar. That Middle West had had enough of national rails for some time. The waves of immigration had now dumped three million people into these states and territories. What good were New York's Buffalo lines or Baltimore's Cumberland Gap lines to this area? They increased their desperation by dumping West more and more people who couldn't reach the Eastern market. Both Lincoln and Douglas realized the Middle West must have rails at any cost. One hundred miles south of Chicago off any river way, was unbroken wilderness. Said Stephen Douglas in the Senate: "These lands have been on the market for twenty-three years but will not sell because they are distant from any stream." Henry Clay said: "This land is, I believe, about three hundred miles in length and but one hundred in breadth. It is utterly worthless just now . . . nobody will go there and settle." Benton stated: "These lands are classed as refuse . . . the young states are made desolate by lands in their midst that pay no taxes held at a price no body will pay. They are jungles."

In 1837 — the worst year possible — the State of


THE UNITED STATES OF AMERICA.

To all to whom these Presents shall come, Greeting:

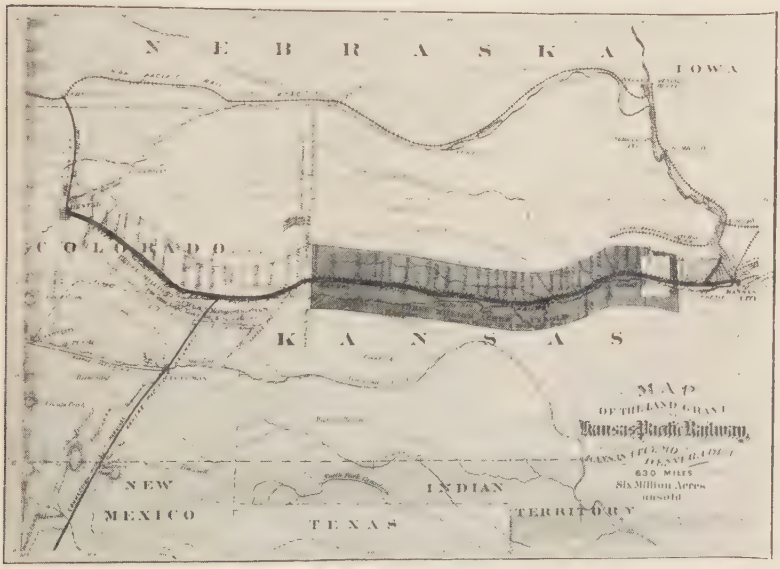
NOW KNOW YE, That the

IN TESTIMONY WHEREOF, I,

BY THE PRESIDENT:

Here is an original land grant which bears the signature of Andrew Jackson, signed by his secretary, dated October 1, 1835, conveying to Samuel Thompson of Tuscaloosa, Ala., a tract of fifteen and ninety-hundredths acres. C. H. Tuggle, father of J. O. Tuggle, clerk for this railroad at Jackson, Tenn., owns the land described in this document.

Land grants played an important part in the development of America and in the construction of our early highways and railroads. This document signed by Andrew Jackson was issued in 1835.



According to the General Land Office, land grants to aid in railroad construction amounted to over one hundred million acres. This map shows a large land grant between Kansas City and Denver.

For many years after the introduction of railways in the West the steam engine was a source of amazement to the Indian. This old print represents one of the finest products of the McKay Iron and Locomotive Works.

Illinois had set aside eleven million dollars for some sort of Central Illinois Railroads to go through Illinois down to the Ohio and west to the Mississippi. Of this three and one-half millions were to go to the Central Illinois; but after spending a half million on surveys, the project came to a dead stop. No more money from the state or from any other source. In 1851 — after fourteen of the most desperate years Illinois ever knew — a charter was granted to a new company to go ahead with a grant of public land, now assigned from the Federal government to help railroad construction. The railroad was to be completed from Chicago to Cairo and to a point on the Mississippi by 1856 in order to get its land patents in full. This would link up both the Ohio and the Mississippi to the Great Lakes. It was completed on time — seven hundred and five miles of rail, the longest railroad, as orators proudly boasted, in the United States at the time; but how dull such a fact reads compared to the real work done by men on the job.

Cholera and malaria were epidemic all through 1853. I quote from the first survey engineer's report:

" We traveled over unbroken prairies. . . . On the 21st of May, 1852, the first passenger train from Detroit entered Chicago, using the Illinois Central track by a temporary track over the prairie to the East of Michigan Avenue. Going South, we traveled 40 miles without seeing a house of any kind. There were no settlers within 20 miles of Chicago. The road was

completed in two sections to Bloomington in 1853. Our laborers numbered from 5,000 to 8,000 men. We had to recruit in New York and New Orleans paying transportation to Illinois . . . but the men would desert when the cholera epidemics broke out and scattered like frightened sheep. Men at work one day, were in their graves the next. In Peru, 130 died in two days. It was dangerous during the summer months to eat beef, butter, or drink milk. Our difficulties were increased by the groggeries and whisky that got in our camps. Drunken frolics ended in riots, when a contractor was murdered and state troops called out. One hundred and fifty laborers left in a body after the riot. Notwithstanding every effort to drive out purveyors of whisky, they menaced our work and followed every camp.

"Iron rails were brought from England by New York, the Hudson, Erie Canal and the Lakes . . . and by New Orleans. Locomotives were sent from the East but the most of the cars were build in Illinois. . . . On the 28th of December, 1855, a telegram was sent to New York announcing the completion of the main line."

The Illinois Central had beaten the time requirements to get its land grant patents by just three days. This is the kind of work of which the public hears nothing, but it grows gray hairs on young heads.

Wages ran from two hundred dollars a month for the construction engineers to sixty-five for the locomotive engineers, fifty for the conductors, thirty for the brakemen, and from one dollar and a half to two dollars and a half a day for unskilled labor, which in buying power of the dollar was not different from to-day.

So much for the construction engineer's story.

Now read from the conductors of the various links as they poked their trains westward across the prairies:

"Two engines delayed 24 hours, while engineers and firemen went off on a drunken spree. . . . North bound freight ran into a drove of cattle, went down an embankment . . . nine cars with it. . . . Engine 72 went off trestle and sank in Lake, where it lies stranded with waves breaking over it. . . . Work at a standstill for 10 days, December, on account of snow and ice . . . 12 snow plows useless . . . engine off track. . . . Two of our Irish workmen shot by groggery gang. . . . Cholera has broken out again."

Had these men been fighting a battle against the elements, the whisky gangs, and disease for some vain king to add a few miles to his domain, they would have been given estates, titles, and crosses of honor. They weren't. They were just on the day's job, fighting a battle to save three million people from ruin owing to lack of markets. It makes a great deal of difference whether the band plays — doesn't it?

Simply acquiring a land grant did not iron out all troubles for the Illinois Central. It took Douglas well on to four years to get that land grant through Congress; and the land grant did bring support from such New York financiers as Robert Schuyler, Gouverneur Morris, Jonathan Sturgis, Robert Rantoul, who could market bonds both in the United States and in England. Stock books called for a million cash and yet another million. There had to be two hundred thou-

sand dollars cash in the treasury before charter could be obtained. Surveys and grading began at both ends, Chicago and Cairo, on December 23, 1851, with the usual ringing of bells; but much more to the point was the fact that the actual cost was ten millions more than estimates of $16,537,212. Contractors took payment half cash, half bonds, and assessments were levied on stock. One would think, with all Illinois mad for a railroad, there would be little trouble about right of way through towns. On the contrary, more than one city council had to be conciliated; and it was fortunate the head engineer was left an utterly free hand to lay the line as it would command traffic and not be pulled hither and yon by claims of little towns to become cities. Chicago gave right of way of two hundred feet along the lake front, but in return the railroad had to protect the city from encroachments by the lake. The company wisely acquired, at a cost of a quarter million for purchase and a half million more for lake protection, still more waterfront. This foresight of an unwavering faith gave it a tremendous advantage in Chicago as the city grew.

Now jump forward three-quarters of a century. The line which they built became a parent stem to New Orleans south and Birmingham south. It covers fourteen different states. It includes one hundred thirty different rail links. It employs as the seasons fluctuate from sixty to sixty-five thousand people. It numbers from sixteen to twenty-two thousand stockholders whose average holdings are seventy shares.

It has paid continuous dividends of from four to ten per cent since 1860. Of the markets to which it gives access, Chicago has grown to over three million, St. Louis to more than eight hundred thousand, Philadelphia to two million, Detroit to a million and a quarter.

Cobden, the great English free trader, was one of the English financiers whose backing helped to build it. Lincoln was one of its attorneys, as he was for several of the Chicago roads at this period; and many a racy story is now coming to light of his experiences with the roads. Mr. Starr relates how when Lincoln had once charged a fee of two thousand dollars, a fussy official answered, "Why, sir, this is as much as Daniel Webster, himself, would have charged. We cannot allow such a claim." Why shouldn't a frontier attorney charge as much to win a case as a more famous pleader? Lincoln took back his bill, raised it to five thousand dollars — and got it. He had to sue to get it. When he stood up to speak before the judge, a button holding his trouser braces gave way. "Wait a minute," he requested. He took a knife, whittled a stick, anchored the button, spoke, and won his fee. It was Lincoln who fought one of the first cases of the Chicago and Rock Island to get a bridge across the Mississippi, which three Supreme Court judges had pronounced immoral and indefensible. It was so to the river steamers, who didn't want their traffic transferred to rails; but that old decision, like many others, had to go down before progress.

Other names famous in national history emerge from the medley of Chicago rails in this period. Stand-

ing in the Central Illinois station, looking to the rear, you will see what was once a freight office. In this freight office worked a boy of German descent. He was short of legs, round of body, but very merry of eye. He could never resist a practical joke. His job for the time being was with the new and wonderful toy known as the telegraph. He had discovered that a slender wire would divert the current; and to the slender wire he had attached a little flap of tin to give other boys of his age a surprise as they lounged up and down the plank platform. Up and down would jump that bit of tin. Stoop and touch it — Shock! It was great fun to the boy; but woe was that day! Along came one of his " bosses." Flop went the tin. The next scene — fat boy racing fast as his short legs could carry him with the boss in hot pursuit. Exit fat boy as employee of Illinois Central. The boy's name was William Van Horn. He next emerges in the rail world up in Wisconsin helping Carl Schurz transport troops in the Civil War. Of another type was a youth named Shaughnessy, also on his first rail job up in Wisconsin. It is hardly necessary to add that both Van Horn and Shaughnessy became master minds in directing the Canadian Pacific to its amazing prosperity in an era of terrible wreckage among other railroads.

Of the six or seven Chicago railroads which participated in land grants at this early period, it is significant that in three the directors were so uncertain of their ability to go ahead even with the aid of Federal land grants, that not a director could be induced

to buy one acre along his own rail. I don't know that we should scorn their timidity. We were not much bolder in our own generation. After the Canadian Pacific had driven its last spike connecting Atlantic and Pacific and great cities had sprung up by magic, I drove through one of those cities with an old friend whose birth dated back to this era. The city was modern Calgary. He was pointing out buildings that had gone up at a cost of from three hundred thousand dollars to a million. " Why, I remember," he said, " when the site of the whole city was swapped for a bag of missionary flour." " Why in the world hadn't we the sense," I asked him, " to go out and buy half the town for five cents? " " Because," returned my sententious friend, " we none of us happened to have the five cents." It was much the same in Chicago in the fifties.

The land grant coming to the Illinois Central was some 2,595,000 acres along the right of way. Though the state had failed to build during fourteen years, the road had to be built within six years. The lands were to be exempt from taxation. The right of way covered one hundred feet on each side of the tracks and the road was to get the alternate even numbered sections of unpreëmpted land within six miles of the steel rails; but if you think all this was given without due returns back to state and Federal governments, you mistake the astute minds of a Lincoln and a Douglas fathering the scheme for the benefit of the public. In place of land taxes, the road was to pay for all time to the State of Illinois seven per cent of its

gross income. No room for skullduggery of padded accounts and concealed assets and extra expenditures on expansion or purchases of other bankrupt roads with profits on the bargain. On every dollar of traffic or other receipts, seven per cent had to go to the state. It was to remain a public highway for the use of the government mails, troops, and what not at such prices as Congress might direct, and in 1876 Congress finally settled that price at fifty per cent of other traffic rates for passenger and freight, and eighty per cent of regular rates for mails.

It proved the best bargain ever made by the state or Federal government with any railroad.

The lands between the grants, which had been classed as " refuse waste wilderness," rose in a year to two dollars and a half an acre, within five years to ten dollars an acre, within ten years to thirty and fifty. The Illinois Central could have bought every acre of that land at a dollar and a quarter to two and a half an acre; but, like my friend in Calgary, it didn't happen to have the money. By 1925, the Federal government had saved by this bargain almost $8,705,743, which it otherwise would have had to pay. This is more than twice the highest upset price at which the Illinois Central could have bought the land.

How did the State of Illinois fare? Up to 1925, on seven per cent of gross receipts, it has received $64,402,422 in taxes. Had the road paid the ordinary taxes independent of the land grant, they would have totaled $34,400,000. The state benefited by thirty millions excess taxes. In other words, up to 1926,

the state got back almost twenty-five dollars an acre in taxes on land which it had been unable to sell. Yet more. When the land was all sold — and little of it was sold by the railroad above ten dollars an acre — and passed into private hands, that same land again yielded to state and county the uniform public tax. Here we are in a realm where figures swim in a haze; and I do not suppose they can ever be pulled out of the haze to show the entire gain to Illinois.

Of the unsold portion of the land grant, the Illinois Central, in 1915, owned 9,774 acres — practically station and freight shed areas; and, of course, the most valuable of this was three hundred and twenty acres in the city limits of Chicago; but recall that that land could not be sold at sixteen cents an acre before rails came, could not be traded for a turkey or a horse.

Of course, as the Illinois Central pressed forward its links to New Orleans and the Mississippi by buying or taking over crippled lines, it fell heir to other less valuable grants with less valuable bargains to the states involved; but that was not the fault of the Illinois Central, nor of the far-visioned men who proposed that land grants should be made to aid rails. If all bargains had been as carefully made as the one with the Illinois Central, few of the bitter words bandied in the great Granger agitation of the seventies would ever have passed from lip to lip, or from vitriolic pen to print.

In the land grant era, from 1856 to 1873, there passed from the Federal government 158,293,377 acres, of which roughly a fourth were unpatented or

not even earned by the collapse of the rails. To this must be added such individual state grants as Texas, swelling the total grants to 167,832,492 acres or 262,000 square miles, or the area of all Texas, or less than all California and Nevada. Twenty-seven rails earned their grants. Some of their stories will presently be told; and they are not the clean record of the Illinois Central. Some were failures foredoomed by poor areas and worse management. Some were examples of unscrupulous rascality, when rotting ties were laid in quaky bogs, or across sheer desert to sell still more rotten bonds, or more profitless stocks to gullible investors, but even here, Fate, Destiny, or Dame Fortune dealt one of her unexpected spanks. The story is so ridiculous it surely may be told. It is so ironical it discounts bitterness and confounds friends and foes alike.

As the various rails obtaining land grants pressed on to claim their patents, it became apparent much of the vaunted land was worthless and could not be sold at fifty cents an acre, no, nor rented at five cents for spring pasture. It was desert, sand, lava scoria brittle as glass and black as ink. The rails which really had tried to link up arable areas on different sides of these lands, worthless for traffic and worthless for sales, besought the Federal government to exchange the worthless grants for at least forested sections from which lumber traffic might be derived. As the timber was without value without rails, the government prepared to accede to such requests and arrange exchanges; but alas and alas! Some scamp with more

cunning than brains, more care for a bribe than an honest bargain — whether in the service of the Federal bureaus or of the rails is not known — took care to destroy records of some such transfers, allotments, earned and unearned lands. The rails wanted good lands. Why not let them have such, no matter what allotments had been patented? And then Dame Fortune played one of her tricks. No wonder she is always portrayed with a cynical smile at all human endeavor. Up from those desolate waste sand lands, up from those thin pasture areas, with rails rusting for need of traffic, " iron tonic for the cows," up from that black lava scoria, burst floods of gold in oil — oil in wealth of which one thousand acres sometimes exceeded the entire stock and bonds of a railroad! Was there a scampering to prove those worthless lands had been alloted and patented and couldn't be reserved by the government? There was, though but a few years previously both Federal government and rails had been trying to prove the very opposite — the government to save the forested lands now more valuable than in the sixties and seventies, the rails to get lumber lands for sales and traffic. It is one of the most ridiculous somersaults in all rail history; and I venture to say, if the dishonest scamp who caused the disappearance of the records could come back to earth to-day, the rails would scalp him and the government agents give him his weight in gold. Write and ask some of the rails what they would pay to-day for " the lost " records. You will find it runs higher than the highest paid writer's dollar a word. They

would pay about twenty-five hundred for three pages of little figures and cryptic words; and I think the government would outbid whatever offer they might make.

And Dame Fortune smiles; and no one can say "the oils are another stench to heaven in corruption"; for no one knows *where* is *what*, or what it is worth. Some day when the leather-lunged shouters are short of a sensation, someone may spring it. Can't you see what a lovely digging up of corpses back to the seventies and early nineties might come out of a morgue with grinning skeletons as the first findings?

Without land grants in the fifties and sixties, would rails have gone ahead? I am not wise enough to say. Up in Canada some twenty-five years ago, when land grants were forever abolished and state aid substituted in guaranteed provincial and federal loans and bonds, all hats were tossed in air with jubilation over an evil system — all hats but one, the hat on a little old gray curly head from the Lower Provinces, who resigned his position from the Dominion cabinet in silent protest. Was he right? I am not wise enough to say. Would the rails so bonded and guaranteed have gone ahead without aid — land or bonds guaranteed? They would not; or they would long since have been built. The Canadian Pacific, one of the most prosperous and solid lines in the world, could not go ahead without aid of both cash and lands.

But to go back to the Illinois Central. Again, luck favored the dauntless. Who could foresee or guess the enormous unexpected traffic from coal in the Middle West, from lumber in the South, and cotton in Texas,

from added areas to tobacco, from rice and tropical and semitropical fruits, from flour mills and packer's plants dotting from Chicago to the Gulf, from manufacturing plants that grew fast as the population grew, from petroleum in floods? The Illinois Central was built first and foremost as a farmer's road. It became a nation's conduit.

Did New Orleans and St. Louis suffer as a result? Their populations to-day are chasing a phantom million.

"According to your faith be it unto you."

AUTHOR'S NOTE

So many different figures and estimates have been given on land grants that I think it wise to set down a very carefully compiled record made by the staff of the Illinois Central in 1926. I do not suppose any record can be set down as absolutely correct; but here is the most nearly correct one yet issued. As the land grants to all Western rails are a point of such vitriolic dispute, I shall not again quote the totals except in two or three cases.

The original Federal grant of land to aid in highway construction was made to the State of Ohio in 1823. In all, 3,239,168 acres of public lands were granted by the United States government to various states for highway construction.

The original land grant to aid in canal construction was made to the State of Indiana in 1827. A total of 4,597,668 acres was granted by the government to aid in canal construction in various parts of the country.

The first Federal land grant to aid in railway construction was made to the State of Illinois in 1850 to aid in the construction of the Illinois Central Railroad. The last Federal land grant of this kind was made in 1871. In all, sixty-four Federal grants were made for railway construction.

An examination of data on Federal land grants reveals a number of important discrepancies between the figures of the General Land Office, Department of the Interior, of lands certified or patented to the railroads and the claims of several railway companies as to lands received and sold.

According to the General Land Office, the total Federal land grants to aid in railway construction amounted to 158,293,377 acres, of which 41,780,000 acres were forfeited or otherwise unpatented and 680,885

were canceled by court decisions. The total Federal land grants, therefore, which were certified or patented to the railroads, as of June 30, 1914, amounted to 115,832,492 acres (180,988 square miles).

In addition to Federal grants, Mr. W. W. Baldwin of the Chicago, Burlington & Quincy Railroad, in a statement printed in the Congressional Record in January, 1920, roughly but liberally estimated the state land grants to aid in railway construction as follows:

Texas	32,000,000	acres
Other states	20,000,000	"
	52,000,000	"

This brings the total Federal and estimated state grants to railroads up to 167,832,492 acres (262,238 square miles).

The land grants certified or patented to states were as follows:

Alabama	2,746,400	acres
Arkansas	2,562,095	"
Florida	2,207,023	"
Illinois	2,595,133	"
Iowa	3,866,701	"
Kansas	4,175,854	"
Louisiana	371,769	"
Michigan	3,133,176	"
Minnesota	8,029,260	"
Mississippi	1,075,345	"
Missouri	1,837,728	"
Wisconsin	3,650,866	"
Total	36,251,350	"

The land grants certified or patented to corporations were as follows:

Union Pacific Railroad Company	11,976,367	acres
Central Pacific Railroad Company	6,300,866	"
Northern Pacific Railroad Company	35,176,619	"
California & Oregon Railroad Company	3,154,994	"
Atlantic & Pacific Railroad Company	4,365,970	"
Oregon Central Railroad Company	2,894,295	"
Southern Pacific Railroad Company	5,129,831	"
Leavenworth, Pawnee & Western Railroad Company	6,883,225	"
Burlington & Missouri Railroad Company	2,374,091	"
Hannibal & St. Joseph Railroad Company	223,081	"
New Orleans, Baton Rouge & Vicksburg Railroad	1,001,783	"
Total	79,581,142	"
Grand Total	115,832,492	"

Chapter XV

Inventions And Devices In Progress 1828–1860

ANOTHER point must be kept in mind to appreciate what this steam flag of progress westward was developing in the subtle relations of Labor and Capital. We have a foolish way of speaking as though bellicose Labor in one camp and cunning Brains in the other camp — in other words, Labor and Finance — had achieved steam's triumph; as though these two camps had been in constant antagonism. Nothing could be farther from the truth. It was the teamwork of Labor and Finance that put steam on the map. We have glanced forward from Stephenson's humble *Rocket* and Cooper's *Tom Thumb* engines, resembling a child's toy, to modern locomotives hauling one hundred and fifty cars. Let us glance back now from 1860 to 1830, when steam really got under way in America.

Steam had begun with a few thousand dollars' outlay regarded as colossal capital. By 1860, surveys had been made to the Pacific Coast which contemplated capital outlay of from sixty million to one hundred and fifty million dollars for each line.

Telegraph had taken the place of the first rough and tumble fights between train crews, when trains met for right of way, to decide which train must back up to the nearest station.

Before the use of telegraphs, poles of cedar with cleats formed a sort of rough ladder for semaphoring. The operator would run to the pole, climb it, with spy

glasses scan the rails, then flag "go ahead" or "stop." A ball with a light was waved at night. Telegraph, too, had to fight for progress. The Erie had established the rule that trains going west should run to the regular stopping place and switch till the trains going east should pass. The train on the switch must not leave till the other train passed. Sometimes, a breakdown halfway caused endless delays. Where was the lost train? One day about 1851 a passenger train from New York was waiting for the delayed eastbound. The superintendent happened to be a passenger. He got out and learned by telegraph that the eastbound had not yet reached Port Jervis. When the receiving operator got the answer back it struck him as such a colossal proof of madness that any superintendent or engineer could think of running trains by orders over a wire, he sent back a quick message — "What blank fool sent this in?" The superintendent telegraphed the agent at Port Jervis to hold the eastbound there and told the engineer on the westbound to go ahead. The engineer refused flatly to take such awful risk. "Do you take me for a blank fool? I won't run by that thing," he stormed, tossing the telegram back to the messenger from the superintendent. He could not believe such messages had gone over the wires. The superintendent sprang on the engine, ordered the engineer off, grasped the lever and piloted the train himself, telegraphing orders at each station where to hold the eastbound. The astonished engineer hied himself hurriedly to the rear seat of the last coach, ready to jump from impending death.

He was so utterly staggered he could not speak and it is to the credit of the superintendent he was not fired on the spot. This was the end of switch delays, of towers for signals, of going it blind, of having negro watchmen — as in the South — act as flagmen and patrols to signal a clear track ahead. It was the beginning of the constant use of telegraph for train dispatching. Telegraph operators were henceforth installed in every station under rules practically continuous to this day. The dispatcher for the division sent orders for every train, which the station operator took down in duplicate. One copy was handed to the conductor with the question " How do you read my message? " The conductor would wire back. If correctly received, the dispatcher would wire — " All right! Go ahead."

Early in the twenties and thirties men had refused to believe cars could stick to rails on a curve. Little wheels behind what we call the cowcatcher had proved they could. A flange on the wheel and a T-rail helped; but even then, the engine builder, the famous Mr. Baldwin, had to construct a toy train with cars and send it whirling on a miniature track in a window to convince the public. When engines increased from seven and eleven to thirty, forty, and sixty tons, not only were they put on circular rails to turn in " the round house " but they were put on turn tables and whirled round to reverse direction. Costs of engines had gone up from two and three thousand dollars to twenty and thirty thousand. Wheels were no longer iron-rimmed with groaning wooden spokes, but en-

tirely of iron; rails, no longer wood with iron straps, but iron. It took some terrible accidents to abolish spokes for solid wheels. In brief, the iron rim of one cracked. Part of it flew off. The car did not immediately collapse. It ran on its other wheels, but the cracked rim tore up the rail. The car toppled over the steep embankment taking all the rear coaches with it. Fortunately, the coupling broke and the forward coaches and engine escaped; but when at night your sleep is broken by the rap-tap-tap of a hammer on the wheels below your berth, know that such testing of every wheel for a crack began the day of that accident. Know more — the humble chap in blue jeans stained with oils, who does that tapping at every divisional point, is as essential to your safety as the clearest head in the president's office. Rails are not a one-big-man job. They are in the United States almost a two-million-man job. If there is gangrene in your little finger or big toe, it may cost your life by blood poisoning. If there is gangrene of hate, resentment, treachery in the heart of a single rail worker, it may cost a hundred lives.

There is a very vital point here in rails, so vital that I deem it one of the silent revolutionary factors that may react through all the labor world. When the Great War threw rails under government control and then back into private control, there were something like two million union workers on rails. There are now 1,626,414. What caused such a shrinkage in the number of workers? Not the shift from government to private control. A deeper factor was silently operat-

ing. Machinery was more and more doing the drudgery work of the man. Gasoline speeders were replacing the old hand-pump car for track workers. Machine weeders were doing the work of men with the hoe. Derricks and giant shovels were hoisting, in one great grip, gravel and mud from embankments that formerly required an army of bending backs. At the same time, all wages for all rail workers increased from something over seven hundred a year to an average of sixteen hundred dollars a year for a shorter day's work. In other words, skilled labor with brains to operate machines had taken the place of unskilled, ignorant, mob labor; and the improvement in service can only be likened to the difference between an old lumber wagon and a silent, well-oiled, swift motor car. Instead of the discard labor being tossed on the human dump heap, the surplus was at once absorbed in other vocations without a jolt in the labor world.

To revert to the devices that came in rails during the first thirty years of their history, springs had come in universal use to avert that " concussion of the brain," which was going to drive all passengers to asylums. An engine to-day has four to five thousand parts, a passenger car over two thousand parts, a box car over five hundred. Who contributed all these inventions? It would require a book to tell; but each invention was the result of the team work — labor and brains.

Instead of little coaches like cabins on wheels, by 1860 passenger cars could seat — not seat " standing

up," hanging to a strap — sixty people. Brakes were no longer a rail tied to chain couplings to avoid the back car telescoping the coach ahead, but hand brakes on each coach worked by the wheel we all remember on old cars when the brakeman scampered through each coach and with a mighty whirl brought each car to a dead stop so abruptly that sometimes your spine got the jolt, sometimes your head. Anyway, it stopped the slide along the rails, especially down grade on icy

The first buffer brake on a car wheel was the simplest possible contrivance. The platform on which the brakeman stands takes the place of the rail tied to chain coupling to prevent the cars from telescoping.

tracks. Lamps were used, though the oil did slop over in a jolt and the glass smudge in a flame. Wood had been discarded for coal in the engine, though it proved terribly hard on the iron of the fire box in sintering, splintering, blistering the iron lining till other inventions in drafts of cool air helped the fires. Bells, gongs, steam whistles, a covered cab for the engineer, had now been added to all locomotives. The engineers didn't like these cabs at first. They thought them un-

safe in case of a quick jump in accidents; and accidents were frequent.

There is a story told of the Pennsylvania Railroad in its early days, when a farmer named Slaymaker had a bull which didn't like steam locomotives, especially at night before lanterns lighted the right of way ahead for the engine, when pine knots surrounded by sand stuck up above the cowcatcher went waving past in a blaze. The bull would bellow and tear up earth. The freight train had twelve open cars loaded with hogsheads of whisky. The bull may not have liked the smell of that whisky. Anyway, he charged head down at the bottom of a thirty-foot bank. Now, the bull ought to have known better than charge up grade against an enemy coming down grade; but the bull was young and he was feeling his oats. The conductor yelled for the engineer to throw open the throttle wide. He did. Engine and bull met. The cowcatcher was a "bumping block," not the scoop shovel we have to-day. It bumped all right. The bull went head over heels off the track uninjured; but the engineer wasn't sure till he saw the bull toss that he wouldn't have to jump and perhaps take to a tree. I don't know if that is why we call the front projection of the engine a cowcatcher; but such they were called from that period. Poor Slaymaker's bull enshrined him in history. Bad weather finally reconciled engineers to the confining cab.

Before the use of the bell rope connecting with the engine, the conductor used to scramble to the roof of the cars, run forward and signal or yell to the engi-

neer for an unexpected stop. It took some agility, especially in bad weather down iced rails. The first hoot of a steam whistle was mere chance. It seems to have occurred in the testing of an engine in the thirties, when escaping steam gave a hoot before it hissed. Henceforth, says an old record, " steam was applied to a trumpet attached to the engine " — a far cry from the baying of the ram's horn to the coach passengers only ten years before in the taverns of the woods.

The tender was a truck with whisky barrels of water to be fed to the boiler through a hose of leather made leak-proof. I avoid technical terms of the sixties: first, because I don't know them; second, because if I did, the use of oil and white coal — water power — is changing all this so swiftly that our own terms of to-day will be as obsolete and confusing in another quarter of a century.

The change from wood to coal cost as great heartburnings as the use of telegraph. Men in Philadelphia had been working on it. They had turned out a coal burner in 1849 and put it on the tracks in 1855, to haul a load of immigrants across the Alleghanies for what is now Kansas. It went beautifully for about thirty miles, then sat down and, balky as a mule, refused to budge. The immigrants almost mobbed the inventors, who were on board. An old wood engine was put on the tracks and hauled the stormy passengers away to the West. The cause of the failure was so simple it was laughable. The jar had clamped down the damper so tight that the air draft was shut out.

That failure caused the two inventors a loss of eight thousand dollars. Coal stoves had in the forties taken the place of wood to heat passenger cars.

You recall the first use of rails had been to haul stone uphill on a gravity system, when the momentum and weight of the trucks going downhill carried the empties up by a chain or cable system. Then steam had proved it could climb mountains on easy grades by switchbacks, tracks going up in curves back and forward across the face of a mountain. Even in the initial test, some smart sceptic greased the tracks to prove it couldn't be done; but the engine climbed just the same at ten miles an hour. On the Harlem in New York and on the Pennsylvania in Philadelphia, small tunnels had proved that it was cheaper where the rock could be bored out and then timbered up to run a train, especially a heavy freight train, through a tunnel in the hill. Then, in 1851 to 1853, the Baltimore and Ohio bent its efforts to the most ambitious tunnel yet attempted — about forty miles east of Wheeling — to bore through a tunnel 2,350 feet long, or almost half a mile. That hill was steep. It required terribly sharp turns in the rail curves and even a twenty-five-ton engine had to puff hard to haul up two loaded cars of fifteen tons each. It was easily worked rock — seamy and friable and crumbly; but would such rock stand up in a tunnel? The tunnel had to be arched and bricked; but in the process a single rock slab would often fall and crush the life out of the men. Before the tunnel was made absolutely safe, it had cost $603,000. To-day, we regard casu-

ally and as a matter of course tunnels of seven to twelve miles, costing as many millions. Which illustrates that blood as well as water goes in what is called " watered stock." Why should the flag of steam progress not have as many gold stars as the flags of war? We don't seem to get away from the savage idea of the man-saver not being as valuable to society as the man-killer. We applaud the victory of one and forget the victory of the other. From 1850 to 1860, there were six tunnels built running from forty-eight hundred to fifty-eight hundred feet and costing from three hundred thousand dollars to a million. This takes no account of small tunnels.

You remember the first wonderful bridge at Boston where " the elegant lanterns " were to be lighted by the thrifty Puritans only " when necessary." The Roebling Suspension Bridge now spanned Niagara. Brooklyn Bridge was one of the wonders of the world; the Mississippi had been bridged for the Chicago, Rock Island Road; Andrew Carnegie was the builder of an Illinois Central bridge across the Mississippi.

The Pennsylvania Road has the credit of first putting up fine rail stations, which later became great temples of traffic surpassing in beauty the most gorgeous temples of the ancient world. Passenger stations and freight sheds now dotted the land. They had taken the place of the old turnpike tollgate and tavern in the wilderness of " the good old days " — when we grasp their mellow primitive romance but do not miss their amazing inconvenience.

Who were the conductors, brakemen, and engi-

neers? Annals of the times describe the conductor as " half clerk, half guard with a dash of the gentleman," off duty received in the best of company like the colonel of a colonial regiment or " a whip " of the old coaching days; but on duty almost commander of a regiment, whose words " Tickets, please " brought the same instant order in a car as " 'Tention " from an officer before a line of recruits. Brakemen were farmboys lured by the wonder and adventure of these race horses on rails — the yeomanry of the old-time army. Engineers were recruited and had to be recruited from the blacksmiths of every frontier hamlet; and the blacksmith in those days was not the simple knight of a mule's hind leg. He was the " mighty man of valor " with anvil and mallet and glowing fire on hearth, who fashioned all weapons and implements of iron. The fireman was, of course, an apprentice engineer; and I'd like to add that I think the Big Four did a mighty good job when they forced recognition of their old-time social status in modern life. They control, patrol, protect, defend more lives in a year than any army, or all the armies of the war ages in the past. If you look up how many passengers are carried in a year safely to far and near destinations with fewer lives lost than are crushed on city streets in a month, you will find that statement meticulously true. Have rails killed and mutilated one hundred thousand people in a year? They have not. In 1926, the record of death and deforming accidents on 285,000 miles of steel is 6,364 deaths, 47,993 injured. Of the deaths, 2,584 were trespassers

— track walkers — 1,299 employees. Of the injured only five thousand were passengers. In 1927, the record for motors was one hundred thousand. On rails for 1927, the record of passengers killed was the lowest ever known — only ten. Highway fatalities — chiefly from rash motors — still continue high.

How much had been invested in rails up to 1860? The best authorities give it up to a billion dollars for thirty thousand miles. That was a heavy investment for thirty years and explains the coming crash. Those Middle West rails helped by land grants were paying good dividends: the Chicago, Burlington and Quincy, sixteen per cent; the Chicago and Milwaukee, ten per cent; the Rock Island, ten per cent; the Illinois Central, five per cent; the Michigan Central, ten per cent; and those high dividends paid when outlay was so constant may also help to explain the crash now visible. Georgia rails, too, were very prosperous, partly owing to high rates, six to eight cents a mile, partly owing to the chain banks and rails, when strong links held up weak ones and securities could be sold in Europe.

Here is a panegyric of the period on rails:

"Railroads have been the great pioneers of civilization. . . . They have overcome distance. . . . They have linked distant communities in golden chains. . . . They have spread the light of learning as from a distant sun. . . . They have made peace more peaceful. . . . Hours are but moments. . . . The mighty weights which break the sinews of beasts of burden are to them but bubbles sporting on billows

of strength. . . . The cry of weariness comes not from their iron mouths as they thunder over the plain, leap across the river, roll over the hills, or dart through the mountains."

There was much to justify such jubilation; but jubilation is always perilous. It necessitates the next jump to hold the triumph.

There were still people in St. Louis who lauded canal travel as far superior to rail or coach.

" When the packet boat came gliding to the locks, her captain gave the order ' Snub her! ' Not to be despised were those packets. Kitchen at the stern, table from end to end of the cabin, three square meals a day, at night a double tier of shelves for beds — what was this but comfort and luxury? Eating and sleeping and the journey going on! . . . True, cars are elegant and sumptuous and roll along faster than serene packets; but you can't go on deck to sit on trunks, sing in the moonlight or duck heads at the cry of ' Low bridge.' Nor can you enjoy scenery from car windows at 40 miles an hour as you could from the gliding packets."

Far otherwise recorded Horace Greeley:

" The nights were tedious. . . . At daybreak you were routed out of your shabby shelf-berth and had dinner on deck to swallow fog, while the cabin cleared and made ready for breakfast. . . . If anyone would recall the good old times, I object."

Chapter XVI

The Wheel On Steel In The Middle West. 1840–1870

TAKE an aeroplane view of Chicago.

Try to imagine some future archeologist. Your far future archeologist looks down on what is now Chicago.

He sees the lake blue as the Mediterranean in the sun, but muddy as he swerves down closer, churned by countless ships of every size and design under the sun — ships that are iron whales spouting oil into equally huge round towers; ships that are giant arks pouring floods of grain yellow as gold into higher towers; ships that are leviathans dumping iron ore at waterside amid belching flame and smoke; structures in marble and concrete and steel emitting lurid fiery glare to the clouds in volumes that darken sky by day and set the firmament on fire by night. It is quite plain to the dullest archeologist this must once have been a slough of sand and mud; for the breakwaters hold back the lake and canals draining through the heart of the great city. It is equally plain that Man — little Man, whose life span is as the grass that withereth, or the spark that goes out in the dark — accomplished all this transformation.

Many types of architecture are here — the Chaldean tower piercing through the clouds, the Greek flat or arched roof, supported by circular columned pillars that dwarf the little creatures below to the size of flies. Instead of the gold-rimmed wheel-

chariots of the ancients with champing steeds, are little black leather-covered coaches on wheels with never a horse to draw, but a driver behind each coach nose sitting with hand on a pilot wheel. It is equally plain to the archeologist that such a vast city must have been created and supported by a vaster empire encircling it; for here are proofs of iron ores in exhaustless bodies, of coal in a region where wood is sparse as in Chaldea, of wheat — wheat in such volumes that the puzzled digger for facts grows dizzy. He gets out his pencil and doubts his own vision and figures. Why, Noah's Ark was a child's toy compared to some of these towers and ships! Here is a vessel that must carry a half million bushels of grain; and a half million bushels of grain must have come from at least twenty thousand acres; and twenty thousand acres imply at least one hundred farms. This vessel is only one of many, and the cargo of one hundred farms is in its hold.

The thing is impossible. A Chaldean camel could carry at most only three to four hundred pounds of grain — that is, five bushels of wheat. To bring to this mart the grain on a single ship would require one hundred thousand camels; and this ship is only one of countless. There were not enough camels in the ancient world to carry in a year the grain coming into this port in a single day. There were not enough camel drivers from India to Egypt. There was not enough pasture across the desert to feed the camels.

Knowing there is a whole school of fellow scientists alert to challenge his figures, the archeologist sweeps

down closer. He credits neither his eyes nor his nose. There are great lumber yards with the whiff of forest fragrance imprisoned in their piles. Have they, like the cedars of Lebanon, been conveyed from afar? This is not a forested land. What sort of conveyance had these amazing ancients of Middle America? Then the fish from the Atlantic, fish from the Pacific — fresh fish; bananas and avocados from the tropics; berries from Texas and Washington; oranges from California; apples from one to two thousand miles distant fresh as the day they were picked. Then he sees that away out to the east and west and south of the main city are suburbs extending farther than ancient Babylon's — houses that are palaces, houses that are little gems set in gardens, slave quarters none, the smaller houses and estates spreading out farther apart till they mingle with country villas of every variety from humble farm home to grand estate.

Then he sees the conveyances — long lines of box cars on steel shuttles running at incredible speed — such speed as the longest-legged, swiftest camel ever known could not pace!

Amazing! And all accomplished in seventy-five years; and no slave labor and no far foreign possessions taxed and looted and plundered to divert the floods of wealth and luxury here! Statuary and paintings in the art galleries from every land in the world. Schools and colleges exceeding in beauty the far-famed temples of learning in Alexandria and Ephesus and Babylon. Stadiums for sports with tiers of seats

going up high as the Babel tower of the ancient East, commanding arenas vaster than the East ever knew. He might get a shock at the automatic slaughter of animal life in the Stock Yards; but he would not get the worse shock of ancient eras, when human life was sacrificed in arenas to the howling delight of hyena audiences, who scrupled at animal diet in a hot climate, but had no twinges of conscience over thousands of war prisoners tossed in the arenas to butcher one another, or be butchered or torn to pieces by wild animals turned in ravenous with hunger. At worst, he might see two men stripped to sandals and trunks knocking each other about with gloved blows, and bloody noses; but he would not see armed gladiators slashing one another to death till the sands of the arena ran red.

He might infer — I do not say he would — that progress had been pretty much regulated by the Wheel; and that this wheel on steel certainly had been a spiral up. If he took a look at his own wheel below his aeroplane, he would be dead sure it had been a spiral up — with many a tail-spin and many a head-dive down, but still a spiral up.

Now come back to Chicago in the early fifties.

The Illinois Central had poked its shuttle south to the Ohio, west to the Mississippi, east to connect with another shuttle from Michigan, which gave it contact with the lines from Boston and New York, just as its Southern links gave it contact by water and presently by rail with Baltimore.

But how did that line come from Michigan? Michi-

gan had not been particularly fortunate in her state-owned rails. One, costing two and a half millions, she had been glad to sell for two millions. Another costing more, variously estimated from two to five millions, she had sold for a little over twenty thousand dollars. Neither was earning enough to pay repairs. Here begins the story of several more of the land grant rails. Keep in mind that each was built primarily and solely to aid the Western farmer to gain access to markets. Not one foresaw remotely the gain in prices from the Crimean War of the middle fifties or the Civil War of the sixties. Not one could foresee the enormous traffic from coal beds not yet opened, from petroleum not yet known, from Pacific lumber areas not yet entered; but without the coal, without the petroleum, without the lumber, ninety per cent of these lands could have been neither settled nor sold. They could not have been inhabited; for they had no fuel and were too extreme in winter climate for the makeshifts of the Orient in mild winters.

And the Michigan roads, oddly enough, through purely individual effort began the story of the Burlington and Quincy. In Boston dwelt a great friend of Lincoln's — John M. Forbes. He is the father of the Burlington. He had been born about the middle of the War of 1812 and passed away in 1898. He knew what rails westward had done for Boston. They had saved that city's commerce from ruin. In spite of enormously expensive mistakes in construction and foolish state laws, they had restored that city's pros-

perity. He had unbounded faith in rails. As a boy he had gone in the clipper ships to China, where his services to a Chinese mandarin were marked by such integrity and good faith that by the time he was twenty-four he had come back to Boston with a fortune and become a private banker. John Brooks had been a civil engineer on that link of the New York Central from Auburn to Rochester and was now scouting round in the West as adviser to several state-owned rails. It was on his advice that Mr. Forbes, in 1846, then in his thirty-third year, had bought that Michigan line from Detroit to Kalamazoo for two million dollars. Imagine a man of thirty-three already on easy street with the nerve and vision to throw two million in the sink pot of a total failure. Of course, it took vastly more cash than Mr. Forbes' slender fortune to build up the decrepit links of the Burlington. It was the savings of New Bedford, Salem, and Boston fisherfolk, which went into the Burlington treasury; but it was Forbes' reputation for integrity that drew these savings out of the banks and teapots and stockings in New England to go into the treasuries of Chicago's decrepit roads. Take a look at the man's face — a strong profile of New England granite, piercing but straight and infinitely kind eyes, the clean-shaven jaw of the period, but lips of bulldog strength, a face that could no more be guilty of rascality in finance than it could of murder. The Michigan road was in deplorable condition. The tracks were rotting wood. The iron straps were literally " tonic for the cows," humping up in barrel

hoops between loose spikes; and the engines were derisively called " tea kettles." Daniel Webster wrote the charter for the new company. Tracks were relaid of heavy T-rail iron, though iron cost all the way from eighty-six to two hundred eighty dollars a ton. Buyers paid what they must; and iron rails from England had to bear a heavy traffic rate across the ocean, and a heavy shift rate from point to point across the lakes, or up from New Orleans. It was no easy job — team, lake, river; freight; but the Michigan Central got into Chicago by 1852.

Now some Aurora people had a charter in 1850 to build a little twelve-mile road to West Chicago. Never mind its name. You'll get its modern name presently. It was a pathetic little road. It had lots of hope and lots of faith, but no cash; but it was better than pig wallows with a sign stuck up " No bottom here." Every shareholder had to be personally responsible for its debts. They had to buy second-hand strap iron for the rails. A second-hand engine and a passenger coach and some six freight cars borrowed or rented were all they could afford; for they had to dig down in their pockets for every single cent spent; and real coin was scarcer than turkeys or ponies. Mr. Wadsworth, a merchant of Aurora, seems to have been the moving spirit. Naturally a merchant teaming goods over roads with " No bottom " would prefer strap rails, however bad, for a highway. He, too, had been in Boston buying goods and had met young Forbes. Forbes sent him to Brooks, who was in Detroit. Brooks took a look over the baby road, told

the good merchant of Aurora that if they could get their state charter amended to permit the road to fix rates at its own discretion for passenger and freight so it could pay, he would advise Mr. Forbes to take hold. He could see it a future link to the Mississippi and Missouri, whither settlers in their tented wagons were trekking with the sign " Oregon or Bust." From that advice in 1855 was born the Chicago, Burlington and Quincy. Perhaps I should say the baby was the Aurora line and the christening the Chicago, Burlington and Quincy. Anyway, there the sturdy infant was, revived, reaching out its hands for that caravan of freight now going westward by wagon to Iowa and Nebraska and Minnesota; but it didn't grow up all at once. Indeed, it grew very gradually; but it did pay its way as it grew — seven to ten per cent, and sixteen per cent in panic years, with the stock never sagging below 98 to 90. It paid in genuine earnings on genuine cash investments and used its yearly surplus to replace rotting wood tracks with iron and later steel, " tea kettle " engines with engines good for forty to fifty miles an hour on level ground, coaches that seated sixty people, freight cars that carried twenty tons, sidings, way stations and car shops of its own. It is quite impossible, though record is fully given in its annals, to tell the story of each link; for the Burlington is made up of two hundred three links. Some of them it bought as bankrupts when prices crashed after the Civil War. Some it bought openly when bonds and stocks were a drug on the market, one where bonds had fallen to four-

teen cents on the dollar. Some it built to connect up links till its twelve miles had extended to nine thousand, covering eleven states in the Middle West, and two thousand more miles reaching out southeast through Georgia to the Atlantic. From one little way station, it grew to have one thousand six hundred. In the amazing period of Mr. Forbes' life, from 1813 to 1898, he saw it stretch from Billings, Montana, and St. Paul south to Colorado and east to Georgia, and he witnessed the growth of its carefully guarded assets from a few thousand dollars to a cash investment from earnings of five hundred sixty-two millions. It can truly be described as one of the first great diagonal lines across the continent from northwest to southeast. From one little " tea kettle " engine burning wood, bought second-hand and renamed the *Pioneer,* hauling a single passenger coach and a few cars of mixed freight once a day, it grew to number four hundred fifty passenger trains a day carrying in a year eighteen million travelers. Poor little *Pioneer.* It had a single pair of big driving wheels, four little wheels forward abaft the cowcatcher, and a little trailer behind with wood. If you think railroad men are poor plugs on the day's job without the imagination of a plodding ox, I wish you would look over the names and the christenings of the subsequent engines. The wood burners were *North Wind, South Wind, West Wind, Gray Eagle, Golden Eagle* with brass bells and shining brass rods. Then in 1856 came the discovery and use of bituminous coal found in its own areas; and the gay brass rods had to be painted

The arrival of the iron horse on the Western plains filled the Indians with awe. Prairie ground, level and easily graded, gave the Chicago, Burlington and Quincy a great advantage from the first.

black; but there were awful heartburnings about the use of coal. It won because wood was scarce, coal abundant, the saving in costs half, the saving in labor half, and though the engineer and fireman were pretty badly smoked up, that did not dim their imagination, for as the combined wood and coal burners came on the line, they were named *Stag Hound, Antelope, Reindeer, Panther, Arab, Whirlwind, Hurricane, Tornado;* then *Lion, Tiger, Samson, Starlight, Moonlight;* and if you look at old pictures, you will see the proud train crews standing on the cab roofs waving an American flag; and their prouder ladies — presumably the ladies of *Starlight* and *Moonlight* — standing in the picture below the cab steps with parasols and silk sashes and polka-dot gowns of the very finest Sunday best. It was not till the coal and oil era that the big headlights — the great glaring searchlight eye strengthened by metal mirrors behind to focus on the track ahead — became general.

Prairie ground, level and easily graded, gave the Chicago, Burlington and Quincy engines a great advantage from the first. It could use greyhounds for speed. Till it reached the mountains, it could build engines for speed over the level with great hauling power; and if you take a look at their later engines, the acme of grace and beauty — low set with smoke vent hardly higher than bell, long and slender of body, with powerful electric headlight illuminating tracks for almost half a mile, and speed of forty to sixty miles an hour — you will agree they are greyhounds by moonlight or starlight. When I add that

some can pull one hundred fifty cars, you can figure for yourself how long a camel caravan would take to carry the same load at fifty miles a day.

The men Mr. Forbes picked as his aides, he picked as they proved their fitness. Mr. Perkins had been a freight clerk at thirty dollars a month — which illustrates the old adage, Once a railroad man, always a railroad man. It is a life job. And ponder the next fact. Follow their leader with the vision of a prophet? They had boundless faith in his good judgment; but invest in the cheap lands of the new territories the line was penetrating? — That was another matter. They had faith in him; but those lands — not on your life! The speculators who trailed along Mr. Forbes' line made larger fortunes in land than Mr. Forbes and his associates did in the Chicago, Burlington and Quincy. The story goes the rounds that it was someone — contractor or surveyor — for the Chicago, Burlington and Quincy, who could not trade a hundred twenty-five dollar hotel bill for one hundred acres of Chicago land. Of her land grants, the Burlington was credited with over three million acres besides other grants that came as debt-encumbered legacies with bankrupt roads that were bought. The 358,424 acres to which it fell heir in Iowa were sold at seventy cents an acre. Those same lands were resold by their owners in the Great War at two hundred dollars. Nebraska lands were sold with difficulty to cattlemen at twenty-five cents an acre. Why did Mr. Forbes with his acumen and foresight and faith in the West sell lands for such a price, when the gov-

ernment upset price on the lands between the rail sections was a dollar and a quarter? For just one reason. Ponder it! It always pays a railroad more to get settlers on land and get the traffic of what they sell and what they buy than to hold land for a future increase in values. The yearly traffic is a revenue for all time, swelling as the country grows. Idle lands may be good collateral for bonds; but they are not revenue producers; and every railroad must pay as it goes and grows — or go " broke " to the tragic loss for its investors.

That characteristic of speed brought to the Chicago, Burlington and Quincy the award in 1884 for one of fastest, surest mail routes in the world, from Chicago to Omaha, a schedule of sixteen and one-half hours, which has run without interruption of a single day for over forty years. Unless we go back in history, we have little idea how keen was the competition for the honor of a fast mail record.

Go back to the days of the pony express mail. Read from the Missouri *News:*

" In the winter of 1860 there was a Wall street lobby at Washington, trying to get $5,000,000 for carrying the mails overland one year between New York and San Francisco. The proposition was extremely cheeky, and William H. Russell, backed by Secretary of War Floyd, resolved to give the lobby a cold shower bath. He, therefore, offered to bet $200,000 that he could put on a mail line from Sacramento to St. Joseph that should make the distance — 1,950 miles — in ten days. The bet was taken and the 8th of April fixed upon the day of starting. Mr. Russell

called upon his partner and general manager of the business upon the plains, Mr. A. B. Miller, now a citizen of Denver, and stated what he had done, and asked him if he could perform the feat. Miller replied: 'Yes, sir; I will do it, and do it by a pony express.' To accomplish this Mr. Miller purchased three hundred of the fleetest horses he could find in the West, and employed 125 men. Eighty of these men were to be postriders. These he selected with reference to their light weight and their known dar-

The pony express was the swiftest mail carrier of the Far West in the fifties. Horses were stationed from ten to twenty miles apart and each rider had to ride sixty miles.

ing courage. It was very essential that the horses should be loaded as light as possible, therefore, the lighter the man the better. It was necessary that some portions of the route should be run at the rate of twenty miles an hour. The horses were stationed from ten to twenty miles apart, and each rider would be required to ride sixty miles. For the change of animals and the shifting of the mails two minutes were allowed. Where there were no stage stations at proper distances, tents sufficient to hold one man and two horses were provided. Indians would sometimes

give chase but their cayuse ponies made but poor show in their stern chase after Miller's thoroughbreds, many of which could make a single mile in a minute and fifty seconds." [Perhaps we should question the enthusiastic figures of the old annals; but I quote them such as they are.]

"All arrangements being completed, a signal gun on the steamer at Sacramento proclaimed the meridian of April 8th, 1860 — the hour for starting — when Border Ruffian, Mr. Miller's private saddle horse, with Billy Baker in the saddle, bounded away toward the foot hills of the Sierra Nevadas, and made his ride of twenty miles in forty-nine minutes. The snows were deep in the mountains, and one rider was lost for several hours, in a snow storm; and after the Salt Lake valley was reached additional speed became necessary to reach St. Joseph on time. From here on all went well until the Platte was to be crossed at Julesburg. The river was up and running rapidly, but the rider plunged his horse into the flood, only, however, to mire in the quicksand and drown. The courier succeeded in reaching the shore, with his mail-bag in hand, and traveled ten miles on foot to reach the next relay. Johnny Fry, a popular rider of his day, was to make the finish. He had sixty miles to ride with six horses to do it. When the last courier arrived at the sixty-mile post out from St. Joseph, he was one hour behind time. A heavy rain had set in, and the roads were slippery. Two hundred thousand dollars might turn upon a single minute. Fry had just three hours and thirty minutes in which to win. This was the finish of the longest race, for the largest stakes, ever run in America. When the time for his arrival was nearly up, at least five thousand people stood upon the river bank with eyes turned toward the woods from which the horse and its rider should

emerge into the open country in the rear of Elwood — one mile from the finish. Tick, tick, went the thousands of watches. The time was nearly up. But nearly seven minutes remained. Hark! a shout went up from the assembled multitude. ' He comes! he comes!' The noble little mare, the Sylph, the daughter of Little Arthur, darts like an arrow from the bow and makes the run of the last mile in one minute and fifty seconds — landing upon the ferry boat with five minutes and a fraction to spare."

Why such a prosperous road was ultimately sold to the Hill system but left intact under its own management will be told as the story goes on.

As I write, it is the middle of a beautiful New England winter, but in the midst of the mild weather has broken a sleety foggy night, very picturesque in ice and snow on the hedgerows and drooping antlered elms under the dim light of the electric bulbs winking in the mist, but very dangerous on the asphalt and concrete roads glazed in ice. Though this is one of the most traversed roads in the United States outside the City of New York, not a motor has passed for five hours. I hear the far scream of a fast freight express bearing New York's breakfast milk to the great city, over icy rails, round curves down grade through the white darkness with a train crew of perhaps ten men. It is like the lonely cry of the midnight trains we used to hear tearing across the white wastes of the prairie through tornadoes of blizzard and snow in the early days — hear and hug our blankets and thank God for shelter on such a wild night, or

strike a match to see if watches were all right; for whatever our watches did, we knew we could regulate them by the fast express freight and fast mails. I listen as the train crashes down through the New England hills with the roar of a wind in the trees. Another scream stabs the white whirl at the crossing; and the palpitating echo of the train through a narrow cut dies away; and I think back to those pony expresses before you and I were born. Somehow, I again thank God for progress by whomsoever wrought or however wrought in all its deviating wandering zig-zag of honor and dishonor, of heroism shining like a star on a dark night, or cunning financial crimes black as ever written in the indelible ink of infamy.

One could go on and tell the story of the other land grant rails, such as the Chicago, Milwaukee and St. Paul, the Chicago and North-Western, the Chicago and Rock Island, radiating out from Chicago; but their story would largely be similar to that of the Chicago, Burlington and Quincy or the Illinois Central. The difference is that none of the others was bound by charters so advantageous to the states as the Illinois Central.

None began under the names by which we know them to-day. None had been able to go ahead without land grants. Each began as a farmer's market highway in such baby links we would hardly regard them as tramways round city squares. Each ultimately became a diagonal road more or less north and south rather than as the Atlantic rails had built, directly east and west. Each had stretched out its

fingers like a child's hand till, full grown, it covered from Chicago to St. Louis southwest, to the far Dakotas northwest, to Lake Superior north, and in one case to the Pacific Ocean. The Chicago, Milwaukee and St. Paul was at first purely a Central Wisconsin line to give the farmers open way to the markets of Milwaukee and Chicago. It ended on the North Pacific. The Chicago and North-Western began as a line across from the Lakes to the Mississippi and was presently diagonally across the states from Iowa to the Dakotas, with another finger up to the mines of Lake Superior. The Chicago and Rock Island pushed across the states between the Lakes and the Mississippi-Missouri system; and luck in each case favored the dauntless. Ores, coal, lumber filled the empty box cars to the West when farm produce filled them to the East. Traffic in the Civil War helped swift expansion in the trying period of outlay during fast growth. Then as the lines in the South banded across the almost uninhabited Southwest, these Chicago roads were ready for the great traffic to and from the land of gold to Atlantic lines now as far west as Chicago and St. Louis. Each paid dividends to its investors as it went ahead, which explains why it could raise money to go ahead. To the present time, roadbed and equipment are a monument of excellence to the builders, who drained the East of its best army and civil engineers and became schools for a later generation of builders for the West.

One we shall learn, the Chicago and Rock Island, later " fell among thieves and was stripped." Another,

the Chicago and North-Western, stands as it was founded, prosperous and unimpaired. The third and greatest of all, the Chicago, Milwaukee and St. Paul, which should be called the Roman Highway of the West, came to grief in one of the greatest, unforeseen tragedies of rail history; and it makes the tragedy none the less galling and blasting to learn that it fell through the perfectly good intentions of its best friends and dragged them to ruin in its crash.

People have a way of speaking as though American roads were the only ones in the world to suffer from the vulture era in rails. This is not true. There is not a system in Great Britain which did not go through the same period impaired. Links had to be added to links. Profitable links were hitched up to unprofitable links, and the good lines loaded with the debts of the losing line, and the stocks and bonds for the whole system sold to the public at enhanced prices for which there was no justification. In a century, which witnessed a Crimean War, the national struggle of Germany, of Italy, the fall of French values owing to the great defeat at Sedan — the swings of rail worth were so great that purely speculative gamblers played their game in Europe as in America.

I once chanced to be the guest in London of a stock broker's family whose father had been a specialist in rail securities all over the world. We were discussing the building mania going on in both North and South America up to the early nineteen-hundreds. As the world knows, losses had been very

heavy to the British investor, especially in depreciated bonds, which the British regarded as almost fool-proof. "Look here," he said, taking a map of England and Scotland and tracing the North and South, East and West systems. "What different is that from our own record? Here is a line — " I forget how much "watered stock" he said had been injected in a great North and South system. "It recovered, of course, as traffic caught up with inflated capital. When people fling good bonds and good stocks to the winds as they did after the Crimean War and after France's defeat by Germany, speculators, rascals, solid investors pick them up. The pools and speculators get out, of course, at high and let the public take its loss at low; but if the solid investor sticks long enough he beats the game in the swing back. Fiduciary institutions take great risks buying and loaning money in such periods. If their judgment has been good, they are applauded. If bad, they are execrated as thieves and swindlers, and may come within the law for penalties."

PART V

The Vulture Era Begins

Chapter XVII
The Triumph Of The Erie. 1850–1860

THE story of rail's progress westward now brings up the ominous black-winged shadows of *why* any tragedies among rails. Where the carcass falls the vultures gather; but what brings a palpitating vital thing down to a rotting carcass on which vultures and wolves feed? "The curse causeless does not come"; but that is one of the platitudes to drive the innocent victims of the curse to blasphemous, furious antagonism.

And that harks back in the amazing shuttle that was now going on in the East, transforming the very fabric of American life, while the West was jumping from triumph to triumph.

This is one of the saddest stories in American rails, also one of the most hopeful. At the end of the dark and slimy trail is the open highway of almost a century's blasted hopes, endeavors, failures, falls, recoveries, falls again, phœnix-like ascent, over and over to our own day.

It is the story of the Erie.

No narrative in all tragedy, in all comedy, heroism, villainy, pluck, determination, piracy, grandeur in character, picayune thievery, penniless adventurers, fakirs, gods or devils, from vultures plucking out the entrails of a Greek hero to a modern polished plausible scamp blowing out his brains in a lonely house on the Western prairie — can surpass the human story of the Erie. There are a dozen true novels in any ten years of its history. A Shakespeare

could have written a comedy on any era in its record, and a tragedy on its very next period.

If one were a fatalist, it would be easy to believe that Mars and Saturn and Jupiter and Venus presided at the Erie's birth when the first spadeful of earth was turned up at Deposit, New York, and had been fighting for victory ever since.

Clear your mind of the idea that *all* Erie's ills came from the Gould-Vanderbilt-Fisk-Tweed fights. They did not. They arose just as much from its sponsors; and its sponsors, from its first president to its latest, have been the highest-minded, cleanest, clearest, most successful business men of each generation. They have been more. They have been men of the cleanest morals in public and in private — cultured gentlemen, who left their mark for good on every other venture they touched. Why, then, the Erie?

Clear your mind also of the idea that Erie's ills arose from the wild sons of Erin who were its first builders, and could no more go to sleep of a Saturday night without the gangs from Cork breaking the heads of the mobs from Ulster, than a boy full of plum pudding can refrain from kicking in his sleep. If you go among the crews of the Erie you will find the esprit de corps of one big loyal family. This has been the case from the first rail — pride that was personal in their own line. The crews felt they owned it and always had, though in its early days it was often in arrears for pay as long as three months and numbered as many bitter strikes as any dozen other short rails. Again and again the local militia had to

be called out to settle those strikes. Its construction engineers have been among the most distinguished men in a century. Half the best devices and inventions of the rail world have come from the Erie and its graduates.

Begin with a spadeful of earth turned at Deposit, a century ago; and keep clear as a sheet of white paper the shape of New York State resembling a flag flying west with its narrow pole down the Hudson and the rails first built lying in a stripe close to the Lakes leaving all the southern stripes of the flag marooned without highways, and cut from New York City by New Jersey and Pennsylvania.

Living in New York was Mr. Eleazer Lord, a staunch Presbyterian of Andover and Princeton, who had been kept from going in the ministry by a slight weakness in his eyes. Before he was thirty, he had been one of the founders of Foreign Missions, of Sunday schools, of the American Bible Society. Before he was thirty-five, he was the personal friend of Wilberforce, Canning, Macaulay, and Baring the banker. He had helped to frame the first American tariff system and was president of the Manhattan Fire Insurance Company. Before he was forty-five, he had written, in 1829, one of the best books on currency and banking. That doesn't look as if the Erie chose fools and knaves for its leaders. Eleazer Lord was father of the Erie. He was all that embodied the very best in American life. Having traveled over Europe, he knew what rails were doing for Europe. He knew that a rail tapping one narrow tier of New York State

couldn't build up the great city. It must tap all New York State and all the West to the Lakes. From his country home at Piermont on the Hudson, he must have watched the beautiful river steamers equipped for great numbers of passengers and volumes of freight plying up and down between the Erie Canal and tidewater. He must have watched and pondered much. It meant a five hundred mile rail leap from the city to the Lakes diagonally across three states. Perhaps that was his first mistake. Five hundred miles would not be a long rail leap to-day, but in the thirties it was longer than Lindbergh's flight to Europe.

Perhaps his second mistake was that he underestimated the difficulties of building through narrow canyons of solid rock, of crisscrossing by bridges wild mountain torrents that filled with fifty-foot drifts in winter and swept away frail trestles in spring. Tunnels and fills and concrete steel bridges conquer such foes to-day; but long tunnels and fills and steel were unknown in Lord's day, and rail engineers had to be drawn from the army or developed.

Perhaps his next greatest mistake was that he could not possibly foresee New York City would ever extend much beyond Fourteenth Street. Why should his dream road buy the little dinky Harlem tramway with its modern New York Central right of way through the city, now valued past the wealth of many an ancient kingdom? Had the Erie bought that entrance to New York, it might have averted the fearful losses of later fights with Vanderbilt, which cost it millions, and the still later needs of dockage and

terminals in New Jersey which cost it more millions in its very neediest period and forced it to pay both whitemail and blackmail to the shyster political rings of two states. Lord was not president at that time. He had just resigned under assaults of bitter criticism; but his successor was one of his own hand-picked vice presidents.

"A year to a day" before the charter of the Erie, the Harlem had been chartered to go from what is now Twenty-third Street anywhere between what are now Third and Eight Avenues out to what are now the Bronx and University Heights. The charter was changed to go up from the City Hall to Fourteenth Street. In the early forties the Harlem came to a stall owing to the panic of 1837–39 and its backers came to Lord with an offer to sell the whole project and all its rights for ninety thousand dollars with, of course, the obligation to go on up the east side of the Hudson. No member of the Erie board, of whom Lord was still a dominant voice, cared later to acknowledge the costly mistake of refusing that offer. The real reason was doubtless the pocketbook. There was exactly $201.33 cash on hand at the time. The Erie was pledged to go up the west side by the Delaware and Susquehanna, through Western New York to the Lakes. To have changed the route then would have brought every Western New York county and town down on the Erie's already overburdened officers. It is only another example that railroads must be built by rail men for traffic and not by amateurs for local favor.

Hindsight is always wiser than foresight; and if progress halted for every lion in the way, it would not be progress. Lord's other two mistakes really resulted from lack of engineering experience. He saw that on such grades as the Erie must climb to reach the Lakes, it must have powerful, heavy engines. Therefore, he insisted on a six-foot gauge, which again cost the line millions in cars and engines and replacement of rails for the standard gauge. His next mistake was sheer lack of money in the treasury to go ahead; and go ahead to the Lakes at all costs he must or lose the Erie charter. When he struck swamps and bogs, in view of the cheaper cost, he insisted on pile-driven trestles. He could not know until it was tried that when driven some of those piles could not find bottom; and that loss totaled more millions; but at the time, he had as advisers some of the greatest engineers in the country, like Horatio Allen, who had brought those first locomotives from England and in 1829 had run one in Pennsylvania across a curved trestle at the risk of his life where not a passenger would cross with him. Allen, like Lord, was a young man — only twenty-six when he performed that feat. He had been a rail engineer in Pennsylvania, in South Carolina, in New York, and was consulting engineer on the Erie until his death at East Orange in January, 1890, at the age of eighty-eight. Eleazer Lord's life covered almost as great a span, from 1788 to 1871.

Long agitation for a road in Western New York had preceded that first spadeful of earth at Deposit. It was to be such a great Appian Way as the Romans

built. It was to reach westward — yes, even to the Mississippi. Wasn't Horatio Allen planning that down in South Carolina between Charleston and Hamburg? Why not New York? Among the petitioners for this road through Western New York you'll find such names as have since made New York famous — Churches and Tiffanys and Harpers and Ogdens and De Forests and Roosevelts and Whitneys and Redfields and Lorillards and Stewarts and Hoyts. Indeed, the daughter of Professor Silliman of Yale wrote in 1831 to her father — "*If they get it* [the railroad] *it will be annihilating all time and space . . . Buffalo to New York in twenty-four hours. You may smile but I assure you it is all true.*"

The capital was to be ten millions. After a half million had been subscribed, the company could organize and begin. It almost reminds one of the Pied Piper of Hamelin leading the little children dancing with his weird music to — Nowhere. No land grants. Land grants for rails were unknown in 1832. But, bless you, the Erie must not connect with rails of Pennsylvania and New Jersey that might drain away trade to Philadelphia. But when the subscriptions came in, they added up $9,880! High hopes but short on cash! Donations for land along the route were equally puny. Some came. Many did not. Capital was shy as it was scarce. The company did ask for a land grant in 1834, but it was flatly refused by Congress. One wonders, would the Erie have fallen among thieves if it had been helped. We can hardly dignify as more than villages any of the towns along its line.

Binghamton had two thousand people. Elmira had three thousand. The great industries were lumbering and farming. It was thought the road could be built for about five millions, and the other five millions could go into equipment and stations. So far, first efforts resembled a child's plans for a house — cardboard for granite, no ruffian big brother to knock it over; and wrens and canary birds inside. Still the wrens and canaries twittered the songs of hope at nest-building time. The only cloud on the horizon was that competing canal stocks were selling very high. By 1835, over two million dollars had been subscribed, of which $118,105 had been actual cash, in about as large installments as canaries and wrens carry to their nests. By way of showing they were sincere, the directors determined to break ground at Deposit. The work was to go ahead on the longest line in the world at the time, in forty-four subsections let to twenty-six contractors, and as the lady wrote to her father, "you may smile," the day the first ground was broken for forty-four sections there was in the bank just $196,409. In my own family is a member who at two years of age set out to see the world with a sandwich in a baby's tin pail. She has since seen much of the world; but she didn't do it on that sandwich.

At sunrise on November 7, 1835, on a clear frosty morning, the chief director predicted that "this beautiful meadow will in a few years present tracks of of rails . . . cars passing and repassing" and so on and so on and so on; and a wheelbarrow of dirt was

spaded up and trundled away, for all the world as you see children play. Then, in December, there came to New York a fire that swept the lower city and consumed in its flames the resources of nearly all the Erie shareholders, followed by the twin panics of 1837–39, with a legislature at Albany favoring canals and against rails. The legislature at most would help the Erie with only one dollar for every two dollars the subscribers put up. An assessment of two dollars and fifty cents was called to pay the clamoring contractors for outlay long overdue; and that assessment was pulled from unwilling pockets about as joyfully as a stubborn tooth that has to come out in sections. What fine old fathers of finance performed the painful operation — Lord, and Stevens of Hoboken, one of the Grinnells, two Astors, a Wetmore, an Ogden, a Lorillard. The Erie's debts were a trifling thirteen thousand dollars. One may be spared the details of extracting money from subscribers for the next few years. It was about as picturesque as a man in a dentist's chair; but Eleazer Lord was the heartless dentist who extracted the unwilling coin. It was about this time that he insisted on the six-foot gauge. That mistake later cost the Erie twenty-five millions in replacement. Then from reasons of economy came the pile work in a swampy section for a hundred miles on the Susquehanna area. Not a rail was ever laid on those piles, for the still better reason that no locomotive engineer would drive a train over such a sinkhole trackbed, though I have traveled over many such, since filled in, during the pioneer days of the

West, when you felt every pole groan as the train labored its swaying course, and you began to wonder where you filed your last will and testament.

Gay, brave, dauntless days but long sleepless nights that left young heads snow-white. No wonder Eleazer Lord let his next lieutenant take charge for a breathing spell; and right then, with an empty cash box, came the offer of the Harlem, priceless in value, for ninety thousand dollars cash. People ask to-day why the fools didn't suspend contracts on other sections and grab the offer with both hands. First, because the contractors would have sued and that would have instantly wrecked the Erie. Second, because if work had been deferred on the western sections to go ahead on the New York City end, the Erie would have lost the support of all Western New York and been voted fraudulent to its charter at Albany. If a master mind had risen — a czar, a despot, a leader who would break fool laws or fool heads — the Erie might have averted that appalling blunder; but the despotic czar type of leader had not yet come into the rail world; and there are many losers on investment who will say, "More's the pity!" When Puritan Boston could blink at fool laws and go ahead west, why couldn't Dutch New York? I do not know except they didn't. Contractors were now working on only part pay down. Shareholders' stock down to 78 had to be used as security to borrow that part pay. The Erie was not stalled. It never did stall; but it was floundering waist deep and sinking deeper at each step. All that saved it from disappearing miles

deep in the bog of its accumulating debts was that the twenty-five miles already laid did pay. So desperate was the Erie in 1842 that a call was issued to the citizens of New York in this ominous language: "*Citizens who are unwilling to be robbed of the trade of the Great West by the Bostonians will manifest it by attending this meeting.*" This was only seven years after those wheelbarrows of mud had been trundled away at sunrise in Deposit. Did the citizens of New York respond? They did not. They were all still for the Erie Canal, and the public prints howled to high heaven of "horrible mismanagement and ruin." No details given; but the Erie was ordered to be sold in a foreclosure sale for forty-one thousand dollars interest defaulted on debts. The big parties were lining up for a state election and the fight was pretty much Railroad — *Anti*-Railroad. Then, indeed, the railroad was in the slimy messes of politics with "No bottom here"; but there were those western counties to be heard from at the polls; so the actual sale was postponed. There must be a gesture to conciliate those western counties. Horatio Allen was called in as adviser. The directors' meeting might have been a funeral dirge. Here were the words of one director: "*We were building a rail road that was to cost millions. We hadn't money to buy candles. There is positively not one cent in the treasury. Every director has endorsed* [*notes*] *for the Company up to the last dollar he is worth. We have to pass a hat among us to pay for the candles which light us at our meetings.*" It is comical now. It was ghastly then. Sixty-

four miles were in running order.Timber was rotting where it had been laid on the grade. Allen, now president, figured they needed at once seven million dollars to go on. Another assessment of five dollars a share. Over four thousand shares were forfeited for nonpayment, which was bad omen of faith in Erie's future. Citizens again failing to come to the rescue, Allen felt he was powerless and resigned as president, but remained as director and consulting engineer.

Eleazer Lord came back in the saddle as president and dominant mind. I hope he remained serene in his faith. There is no proof that he did not, though the offer of the presidency had been peddled round like an orphan baby of bad antecedents. A new factor had come into play as an influence in New York. Coal was being used for fuel instead of wood, and coal is to this day the great traffic producer to the Erie. How to get that coal from Pennsylvania mines for New York? To its credit let it be set down in the words of one of the lobbyists at Albany: "*not a dollar was spent to influence legislation.*" It was not. The Erie hadn't the dollar. One west-county man complained bitterly he had to pay all his own expenses, and his bills in New York City and Albany cost him "*the enormous sum of* $140." A later group of Albany lobbyists would have regarded that as hardly pay for cigars. The founder of the Harper Publishing House refused the presidency, and there came in Benjamin Loder, a successful business man of Westchester, who had never asked a dollar loan from a bank in his life. Behind him he had the strongest

men in New York, such new names as the Harpers and the Phelpses and the Dodges. Subscription books were opened for more money in installments of five and twenty-five and thirty till one hundred dollars had been paid for each share. Grocers paid up one hundred thousand dollars in one day. In all, three millions dollars was raised in a month. Contractors agreed to accept payment one-third in stock. The pest of local jealousies along the line nearly drove the directors mad. Pennsylvania would only permit the line to cross the state on payment forever of a bonus of ten thousand dollars a year. Charges on coal should not exceed one and one-half cents a mile, though teaming the same distances cost as many dollars.

But the crossing of the Delaware at Port Jervis was a terribly costly business. The hills were solid walls of rock, the roadbed had to be blasted out. The Delaware was a mill race; but again luck favored the dauntless. George Scranton, at what was then known as Slocum Hollow, believed that with coal and iron on the spot he could manufacture T-rails right there for the Erie; and the Dodges of the Erie backed him with money for the machinery. This cut the cost of rails from eighty-six dollars a ton to forty-six dollars, and the city of Scranton was born from the Erie's first great trials. Farmers of Pennsylvania were less hostile now; for they got the job with four horse-and-mule teams of hauling those rails sixty miles to the tracks. The cash box was empty again, but one hundred fifty miles of the road were now running in

the western counties. The company owed almost fourteen million dollars in bonds, having first, second, third, fourth mortgages piled in a tier one on top of another, paying the awful interest charges of seven per cent on bonds which the promoters " shaved " at from 90 to 70 of their par value. When the Erie finally in 1851 reached the Lakes, it was the longest railroad in the world except one — from St. Petersburg to Moscow; but it hadn't yet got into New York except by boat. If one were philosophically inclined, one would ask here — why had its backers plunged on and on? And I know no answer to that question except — Destiny forcing human tools to greater ends than human vision can grasp, or the more potent human argument — the Lure of the West.

The great event of finally reaching the Lakes was celebrated in a monster excursion partly by boat and partly by rail from the 14th to the 17th of May. Practically every eminent character of the period joined the excursion, to such an extent that shareholders could not be carried. President Fillmore, Daniel Webster, Stephen Douglas, aldermen, mayors, bankers, governors of states, came to witness the triumph. A procession marched through New York City from the Battery up Broadway to the Bowery, then down the Bowery to the City Hall, with bands and bunting and horse squadrons and infantry and police on foot, amid such a din of cannon and tin horns as the city did not again hear until the Civil War. The steamers to carry what the press, which had reviled the Erie

ten years previously, called "our distinguished guests" were "adorned in evergreens, flowers, flags, banners," and the onlookers numbered "50,000 people" — who almost burst their lungs cheering the triumph of a road which they had denounced as "a ruin." Webster rode in a rocking chair placed on a flat car, so he could view the scenery. Banners at every town on the river and along the rails were inscribed "Welcome to the Iron Horse." Part of the run at Port Jervis was made at almost a mile a minute. One of the exuberant banners up in the marsh area perpetrated the pun on President Loder's name —

"*Bring out the Big Gun — Lod-er — the Mountains are Leveled, the Valleys are Filled, the Marsh is Dry.*" Perhaps if some of the visitors had been told how the marsh had been filled, they would not have thought it very *dry*. Engines spic and span in fresh paint on sidings blew their whistles and rang their bells as the excursionists sped west. "*Westward Ho!*" shouted other banners. Poor Webster orated from his flat car to the throngs at each stopping place till his throat failed him. Poems of welcome were read. The wittiest speech of any welcome was ascribed to Alexander Diven of Elmira:

"The cost was estimated at six million dollars. When you discovered it would cost twenty million, you did not shrink even then. But had the public known that it would have cost such a sum, the railroad would nòt have been built this day, nor perhaps for many years to come. A draft of yours was

never dishonored, even when those animals, the bulls and bears of Wall Street, were alarming the money interests. When there was not a dollar in the treasurer's hands and those gentlemen used to come to him with demure faces that seemed to say all was lost, both your treasurer and president used to greet them with as hearty a laugh as Napoleon gave before victory. This disarmed their suspicions, and when they saw your smiling faces they went into Wall Street and said: 'There is no danger. Our apprehensions were unfounded.' Then the enterprise went on prospering, until now at length it is accomplished, and everything looks bright and cheering. But there is better cheer for you, gentlemen, than mere words. We will show you a table spread with the products of our city market — you city gentlemen. But for you, what would we know of fresh shad and living lobsters? [Roars of laughter.] What is better than all, you have brought us to-day a live President. [Renewed laughter] Who, a little while ago, would have expected such an honor for this village? "

How the honored guests survived the surfeit of banquets is not told; for "great hilarity ruled the night." Wild cheers greeted the first glimpse of Lake Erie at Dunkirk, the western terminus. The menu comprised: "Chowder, a yoke of oxen, barbecued, ten sheep roasted whole, beef à la mode, boiled ham, corned beef, buffalo tongues, bologna sausage, beef tongues (smoked and pickled), one hundred roasted fowls, hot coffee, etc."

"The barbecued oxen excited much curiosity. There were pork and beans in tin vessels holding fifty gallons each. Bread had been baked in loaves ten feet

long by two in width, and their weight was such that it took the strength of two men to carry them. Ranged along the tables were barrels of cider to wash down the viands."

Poor Webster sat dumb, unable to cram down another mouthful. The President, the governor of the state, Stephen Douglas, a Cayuga Indian chief, Loder, the president of the Erie, all were speakers; but Horatio Allen captured the plaudits of the throng; for he gave an account of his own early exploit running across that trestle long ago when he had opened the throttle and let her go because he was afraid if he ran slow the trestle would collapse. That was only twenty-three years ago, when he was twenty-six years old with the daring of ignorance and youth.

"Aye [finished the Cayugan chief a little sadly]. But fellow citizens, in behalf of my tribe, I come to congratulate you upon the completion of your great work. Your passage through our territory amazed my people; nature seemed to shake as you thundered along, and the gigantic oak and lofty pine bowed in token of your triumph. But the heart of the Cayugan is warm, and he greets you and welcomes you to his country."

Poor President Loder of the Erie, who had forced a bankrupt road through to triumph, resigned at once. He had broken his back with the tireless work and worry. His health was shattered. He had begun life as a country teacher, and died an invalid at Rye twenty years later.

All this is the official side of the building of the Erie; but how dully it reads compared to the work of the men out on the job of the Great Appian Way that was to rival Roman roads. The Chester Meadows, now market gardens, were part of that section where piles had been driven and other poles left to rot when the treasury was empty. When the Erie gangs resumed work, the piles had rotted and the poles mysteriously disappeared in farmers' wood lots. Fine granite blocks left for grading were now found in farm and village houses — how they moved of themselves, the householders could not explain. They had bought them from somebody, who had bought them from somebody.

Few if any strap rails were laid on the Erie, certainly not after 1840; for iron rails imported from England were bought till Scranton began manufacturing American rails along the line. Many of these imported rails were paid in stock, which made serious trouble for the Erie later, when it was bought up at five dollars a share and used in mad market scrambles.

When the roadbed came to Middletown, many farmers gladly donated right of way, and the Erie paid the others current prices; but one old Dutchman demanded double price. The builders went ahead. One morning when the gangs came shunting out on their gravel flat cars, across their right of way stood a four foot rail fence; and on the other side of the fence sprawled a man across the track hugging for dear life crosstie and rails. The engine stopped and the boss ran ahead.

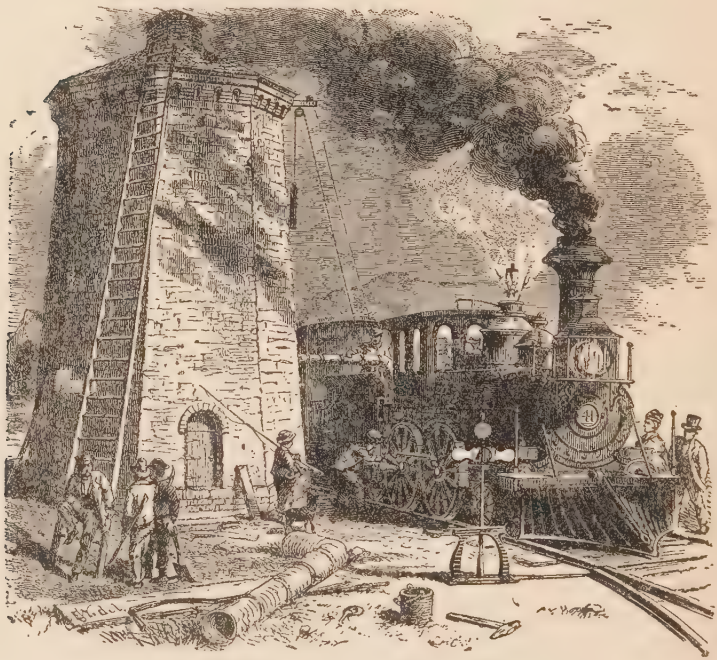
"Can't run through my farm until the Company settles with me," bawled out the stubborn Dutchman.

The engineer tried to scare the old fellow up by running within a foot of him; but in the language of the conductor, "he didn't scare worth a darn." The railroad hands pried him up and threw him in a car and took him down to Middletown; but it was cheaper to pay the old curmudgeon than fight him through the courts; so he was paid.

It had been the custom to pump water at the trackside for the engine boiler. At some places, where the stream was far below, workmen had to pass water up for the engine of the construction train in lines of six hundred pails. Near Middletown was a hill. On top of that hill was a spring with a reservoir to hold river water when the spring failed. The owner of that land was desperate for ready money to stave off a mortgage. He laid a pipe to supply passing engines with water by natural gravity. The Erie paid him two thousand five hundred dollars for the device; and that was the beginning of tanks for the Erie and, so far as I can learn, of tank systems for other rails at the time.

It was amazing how rough rock timberland that could not be sold for three dollars an acre went up to fifty dollars when the Erie wanted to buy it outright for ties. An old Dutchman near Port Jervis feigned such joy at the prospect of a railroad, his answer as to his charges for right of way was: "Vell, rock is not vort mooch! I von't scharge you mooch for dot"; but when the contractors came up to his farm, the

value had soared to one hundred dollars an acre; and they had to pay; for when rocks were blasted out, slides often crashed into the farmhouse below and there were damage suits.



WATERING-PLACE ON THE ERIE RAILWAY.

The first water-tank was made on the Erie by piping a mountain stream into a tank on the hillside. This picture shows a second development of the water tank. A mechanic is seen tapping for "sound wheels" while the engine takes a drink.

At Shin Hollow, near Port Jervis, bonuses were paid the navvy gangs of wild Irish boys to hasten the work; and with farmers supplying the gangs with home-brewed applejack, that ran sixty per cent pure alcohol 1848 was a pretty hilarious winter in Shin

Hollow. "Shure," said an old son of Erin once to me, "we niver wint to the Fair widout a shillala and we didn't think we'd had our fun unless a few of the byes came home wid broken heads." Amid the rail gangs of three thousand were two hundred boys from Cork and about an equal number of what the Irish called "dom Dootch." Whether the contractors' stores overcharged the shanty men, or there had been a bit too much of the "drap of the craythur," one gang of Irishmen had driven out another and then proceeded to run out "the dom Dootch." I don't know whether the Dutch used the wooden heels of their boots or their fists; but they sent their assailants flying. All resumed quiet and the shantymen had come back to their bunks, when the rioters swarmed down, ordered all foes out and when the gangs in bed ignored the summons, chopped down the supports to the shanties, drove out the Cork men and proceeded "to hell wid d' Dootch." By this time, Germans and Dutch were angry men. They had got hold of some buckshot guns and waited till the drunken rioters rushed within a few feet, when they let blaze. Mr. Mott, who tells the story, says the ringleader was filled with small shot "from neck to heels." The local militia was called out and trundled a cannon to the scene of action. The rioters melted like snow in the sun. The joke was — not a man in the militia knew how to load and fire that old cannon. The rioters were arrested and fined; but it was just one example of what the contractors had to handle besides rock and gravel. At Port Jervis were many labor-

ers of this character — rough stuff in the making, desperately difficult to handle, full of resentment to the old European feudal order of things but as ignorant of the fact that liberty is not license as a suddenly unchained pup bulldog that goes out to fight every other dog or shake every cat by the neck till it learns the other dog may have teeth, and the cat claws.

In another riot, an innocent onlooker was stabbed to death by a drunken ruffian. By some political pull, his sentence was light and he was pardoned and taken back on the Erie as a brakeman; but by a strange nemesis, he was run over by the cars of his own train only a few steps from the spot where he had killed an innocent man.

Hardly a soul along the new line had ever heard the night scream and echo of an engine rushing through a canyon. Saturday nights were the great occasions for coon and panther and wildcat hunts. An engine had been sent through one night off schedule time. What was the amazement of the engineer to see break from the brush a rabble of dogs and frontiersmen with guns! The engine gasped. So did the dogs and panting men. They had mistaken the hoot of the whistle for their game and nearly broken their necks rushing down a precipice and across a swamp to shoot the beast. On another occasion, a mob of bushwhackers and their youngsters climbed uninvited all over a standing engine. The engineer didn't exactly like his human cargo. He let off one powerful blast of a whistle followed by a snort of steam and awful chug. They thought "she had bust" and hadn't

stopped running when the train crew recovered from laughter.

A book could be filled with such stories. Said a Binghamton paper of 1848:

"Some who have often seen this spirited *animal* before, and been conveyed by its wonderful speed, are delighted to witness his antic gambols among the hills of Broome. Others who have never ventured beyond the limits of the 'sequestered counties' are amazed at the gigantic power of the steam horse, while he snorts and snuffs to the fresh breeze of our valleys, and vanishes away to the morning fogs of the Susquehanna. The boys throng the track to see which way the *bull*gine is coming."

Or take a few pages from the daybook of President Loder, who completed the line and retired with shattered health.

"I arrived here yesterday (Sunday) morning at three o'clock, having traveled nearly all night, which together with a severe journey on horseback over an almost intolerable road of about 100 miles up the Delaware River, and a bad cold and head ache, confined me to my bed nearly all day. . . .

"I have just arrived at this place after a fatiguing journey on horseback — on foot — on lumber wagon — &c. Yesterday all day on horseback, riding through snow, rain, hail and slush. . . .

"After three days' heavy dragging through deep mud, snow and ice, and cold, rainy atmosphere, we have arrived at this place. We have now seventy-five miles of the same kind of traveling to reach Lake Erie, which will require two more days of hard traveling."

And when he reached Lake Erie, he had to hurry back without rest to fight hostile legislation at Albany. If anyone thinks the building of a great railroad is the dumping of ties and rails along an illegally seized right of way to play with stocks and bonds as a football in Wall Street, this record of the man on the job in the field should convince him that financial speculation is only the side game of the camp followers.

Chapter XVIII

A New Type Of Rail Man Comes To The Erie. 1850–1880

THE best allegory of Erie's record from the late fifties to the late seventies is the place where I sit writing these words. It is in the southern section of the peaceful, beautiful Berkshire Hills on that Harlem Road which ought to have been a section of the Erie but wasn't, and was in consequence grabbed up by Vanderbilt as a part of his vast plans for an all-rail route from New York City to the far North and farther West. Not a great distance away is the early home of Daniel Drew — a tightwad cattle drover — who made his first money by salting cattle and watering the thirsty creatures to bursting point and then selling them on the hoof to the Bowery buyers of New York. From such profits, Drew advanced to become a steamboat man on the Hudson, rivaling Vanderbilt. Then he became moneylender. Then, like Vanderbilt, he foresaw that the steamboat as an inland carrier must give way to steam on rails; but he wasn't a plunger like Vanderbilt. He had saved his pennies too carefully. The evidence was in his clean-shaven hard thin New England jaw, in the crafty pin-point suspicious shifty unrevealing eyes, the cruel tight lips with the droop as of a man who had never laughed joyously as a youth nor smiled once frankly and openly in all his life. It was a tragic face, too. The high forehead was on a brainy head — a good man spoiled, we would say,

but in ignorance capable of fanatic and frantic ruthlessness for good or ill, whichever way the driving power pushed him; capable, too, of slimy, cringing hypocrisy and utter self-delusion.

When I came first to the valley as ignorant of the Erie and the Harlem, as the Erie and the Harlem were of the far West, I moved into an old mansion house that had been the early community home of Lawrence Oliphant and his idealists, who came to wreck like the Erie owing to the rascality of associates. On one side were such great primeval forests as the Erie had cut its way through to the Northwest; on the other side, in a horseshoe, such a beautiful mountain brook as the Erie had to follow and span and tunnel in its path to the Lakes. The scenery had such close resemblance to the canyons of Fraser River in the West, the old place captivated me; but I hadn't dwelt there two years till I became aware that, like the Erie, it had ghosts.

The house was built as Eleazer Lord had laid the roadbed of the Erie, on eternal rocks; but the superstructure was so shoddily put up, though money had been poured in it like water, I soon became aware much of the frame work would have to be removed to blast out the rocks for a heating system adequate to modern conditions; so, like the Erie, I too had to cross the stream and move into a house, which cost me more, but was workable in figures of domestic economy. And that, too, by the same token was not unlike the Erie.

But the resemblance of the old house didn't cease

there. It was much more real. In not exactly a happy mood one day, while supervising changes in rebellious fireplaces, I struck a side panel. It gave — and revealed a hidden alcove. I hit the other side. It twisted on pin hinges and opened another secret panel. This was becoming interesting. Another day, directing the removal of a built-in bookcase and billiard table, I noticed a waxed keyhole in the floor. I traced it. It was in a hidden trapdoor covered by the table and the bookcase. I had the trapdoor pried up — an oblong bored out of the solid rock unconnected with the cellar, damp-proof, weather-proof, empty; but for what? I inquired of aged neighbors and learned that between the moving out of the Oliphant idealists and the moving in of the last owner in whose hands the property had been for two generations, there had been an interregnum, when " Jim Fisk and Tweed and Sweeney and the rest of the Tammany crowd " used to come up for week-ends, in the colloquial vernacular, with " carloads of booze and opera girls and boodle, to divide the swag " before the famous Lexow Committee scattered the infamous political ring; but of living people, only one was old enough to recall the Jim Fisk and Tweed days, when the Erie iniquities were in their full poisonous bloom; and he was an octogenarian in a mountain cabin, whose ancient white mule had such a nocturnal habit of coming down and rolling in my kitchen garden that it gave me a good excuse to go up the mountain and see what I could dig from this old bed-ridden Father Christmas mountaineer. When

I add that he later sold his property to a modern power company and carried the substantial uncashed check for months, you get an idea of how far modern life had touched his primitive ideas.

Fortunately, in the somewhat ridiculous interview, I had a modern writer of Drew's life with me. While he recalled this and that of the old Fisk-Tweed days, the coaching and sleigh parties, of which some of the old conveyances were rotting in the attic of the ample stable, I soon found the old fellow was reluctant to open up to a woman on " the carloads of booze and ladies." He didn't consider those subjects proper for discussion with a woman; so I deliberately turned away to his housekeeper and presently heard in that stage-whisper of the deaf, which can be heard over a normal person's shout — " and there was champagne, yes, sir, champagne — and " — with an awful look in my direction — " g-ur-ls! "

Poor Fisk! The second actor running true to form in the tragedy of the Erie!

I then went digging after Fisk's antecedents as I had after Daniel Drew's. Born a poor boy amid the hills of Vermont, Fisk had been placed with a neighbor, where he could go to school. The three R's and the birch were the leading subjects on the school curriculum; and the last had been plied so vigorously on little Fisk that he ran away, age ten, unable either to read or write. When Drew came in the rail world in 1854, he was fifty-seven; so he was, far as we can guess, at least old enough to be Fisk's father, when he proved as evil a mentor in ways that were crooked

as Bret Harte's Chinaman. How Fisk passed the next ten years is an unknown page of his life — probably hungry often and sleeping in circus tents; for he was always more or less the circus showman. He was known to have traveled through all Western New York as a circus boy, ticket seller, " sub " or " supe," as the country ring could use him; but he turned up radiant and resplendent in 1858, with a caravan of peddlers' wagons drawn by twenty spanking horses, selling silks and grocery wares through sharp-witted country lads in his caravan, to local country merchants. He was known as " a lady killer " then and loved to flash into the country hamlets with his red vans and galloping four-in-hands, the queen of the countryside seated on the box, conspicuous as he could make himself and his partner; and the scandal and the repartee and the good-natured bullet-proof wit of the young salesman were as effective advertising in the country towns as the same tactics proved later on Broadway.

" Lie about a shilling, fellows? " Fisk used to banter. " Pooh! I might tell eight lies about my goods for a dollar; but for a shilling! " Prior to the Civil War, Fisk was a junior partner in a drygoods firm in Boston, from which he seems to have sold out and come to Wall Street, and found himself promptly frisked out of his life savings of some fifty thousand dollars. Mr. Mott, the official historian of the Erie, says Jim Fisk took this ill adventure of his first big plunge in the financial maelstrom as he took everything — with bluff good-nature but none the less

sinister vow: "Wall Street ruined me. Wall Street shall pay for it!" Wall Street did — paid through its nose in such fashion that its reputation has not recovered to this day. How he fell in with Drew, the religious fanatic and financial screw, is unknown, but it is supposed Drew needed him to sell under cover of a brokerage firm his steamship lines so he could go over to steam on rails. The Erie, with its huge freight revenues but always empty treasury, seemed to offer the biggest prize to a man with real cold hard cash to lend and no conscience to restrain him. Anyway, Fisk was backed by Drew in the brokerage firm of Fisk and Belden. When the Erie was in the deepest gutter of its cesspool slime, Fisk was asked how it might end. His nonchalant reply was: "Can't just tell — Marble Halls of New York, stone walls of Sing Sing." As the world knows, it was neither. It was the assassin bullet of a younger man jealous over "a wanton's smiles," but circus host and showman Fisk was to the end, and when asked if he had any hope of recovery, he mumbled that he "hoped so"; and died without a moan or murmur of complaint at Fate. Take a look at the face of the man! He might be a circus whip, a ward boss, a race-track sport. Elaborate in his loud costumes and louder diamonds and glitteringly harnessed horses and dog-carts radiant as in his circus days, he was the hero of the mob and the angel of the chorus girls, for whom he set up luxurious residence next to his equally luxurious quarters for the Erie. The Grand Opera House and the old Fifth Avenue Theatre were his

pet side shows. He was devoted son to aged father and mother, devoted husband to loyal wife — yet left all penniless. In contrast to his showman life, he lived in two obscure second-story rooms almost as penurious as Daniel Drew. The real Fisk behind the doors of those two obscure rooms, no living soul ever knew. He had the reputation of a good sport. Yet when he couldn't win fair and square, he stopped at nothing from bribing judges, who were his creatures, to hiring Bowery Tommies to beat up foes — sheriffs or men who voted wrong — with gangs of city toughs. In figure, he was remarkably handsome after the fashion of the big bluff blond, fat of jowl and body and conscience, if it had not perished early of fatty degeneration. It is interesting to read the roster of the men who were his pallbearers, while traffic paused draped in black — they were the colonels of all the aristocratic crack regiments in the city. On the coroner's jury were the leading citizens — the Clews', the Blisses, the Lincolns, the Hoyts. He seems to have been one of those extraordinary human magnets made up of two extreme poles — good and bad — the most hopeless of all characters to be classified; for just when you have them classified as among the black goats, they hop across the line to the white sheep; and just when you have them classified as good fellows, they are back among the black goats.

For the great tragedy of the Erie, the characters are now all set but one, Jay Gould. Without Jay Gould, the stage would be *Hamlet* with the Prince of Denmark left out; and he was the most enigmatical

of all. His enemies called him "a pasty-faced little weasel." His friends designated him "the financial genius of the greatest rail age the United States ever knew." Which was he? And I answer reverently, only the Angel of the Eternal Assize knows. He never joined the wild frolics of the gay throngs, who brought up "the cars of booze and girls and swag" to shock the countryfolk in a quiet hamlet. Such buffoons were his obedient tools — but tools who had to obey his nod or divine his designs and carry them out without word written or spoken of his aim. He was as clean of vice in his private life as polished silver. He cared nothing for money, only for power. He cared nothing for the prize, but only for the game, and seemed to juggle a dozen games from one brain with one hand. No one will ever know the extent of his private benefactions and no one can ever estimate the number of innocent people ruined in his manipulations of the vast properties that fell in his hands. Examine his character by any measuring rod you care to use — moral, economic, financial, psychological — and it isn't easy, for he was secretive and mercurial in his lightning moves. There are only two essential weaknesses in Jay Gould's character. First, he was somehow or other, willing or unwilling, destructive. That seemed to have resulted as much from the shortened vision of his own times as from his own nature. He did not seem to apprehend, even dimly, that there is as moral a law, as unbreakable an unwritten law under finance as under conduct. You can no more break that law than you can break

the law that two and two make four, or that fire burns. You may think you can break the law, but it breaks you. A man can only steal when other men don't steal. When all men steal, he is gone — gone back to the beast of prey. A man can only murder when other men don't first murder him. When all men murder, he is killed by his own code and should not whine. That is too much like trying to be a beast of prey and a man at the same time. It doesn't work in the scheme of progress. The lawbreaker sooner or later, in public or private, goes down under the wheels of the destructive machine he has set going; and I do not know an exception to that from the hangman's rope to suicide. Vanderbilt might have had, and did have, fifty flaws in his personal character to Gould's one; but he was a builder, a constructor always. Gould, somehow or other, was not.

Gould's other weakness was so small and so picayune it is almost laughable. Amenable to flattery — never! He hadn't enough personal vanity in his make-up; but he had a readiness, a deference, to take titled scoundrels, outcasts from their own class in Europe, in his business confidences and his social circle for which they were unworthy as the mud on his door-mat. An example of this will presently be given.

He was born in Delaware County, in 1836, from which my own ancestors came; and there are legends of his school life among their descendants to this day. By some, he was liked keenly, though distantly. By others, he was disliked intensely, but that, as far as I can gather, arose from the fact he was a fragile

studious boy given more to books and his own shy ambitions than to the rough and tumble scrambles of a pretty rough and tumble period. Jay Gould beat all boys of his own age and much older in his studies and in spite of his fragile physique, between his twelfth and his sixteenth year, trudged weekly from ten to twelve miles on foot — when he could not get a chance to ride — to attend the Academy, or what we would call High School. The Academy was for "gentle women" and "gentle men" and had not teachers but preceptors and preceptresses. I hope you see the distinction had a wide difference. Here the village ruffian had to drop out, or modulate his loud gruff bully half-man adolescent pup-dog voice to a self-controlled suave voice, for which Jay Gould was always known even in his most vicious fights with the bulls and bears of Wall Street. If the youthful pupil were still a wolf beneath the veneer of good manners, he had to mask the wolf well or he would be given a gentle hint that the Academy would be too crowded to receive him next year. He had to graduate right up to high line in his studies; but he had also to graduate right up to a fine, invisible line in his manners — or go! And that indelible stamp you will find on the descendants of those graduates from Roxbury and Delhi to this day.

Jay Gould began life with two inestimable advantages. He came of the very best old Colonial stock and he married into the same stock. That possibly explains his unkillable pluck, though handicapped from the first by a small, fragile body. What he lacked

in brawn, he made up in brain. He trudged over the fields that long distance to the Academy because he loved his clean shining little stone farm home for week-ends; but to pay tuition fees, he had to keep books for a blacksmith at the princely figure of sixteen dollars a month. At night, by candlelight, he studied surveying and history, for which he had a mania. If Gould had not become a financier, he would have become either a great civil engineer or a great historian; for he made six hundred dollars mapping Albany County before he was eighteen, and wrote a history of Delaware County before he was twenty. When he had exhausted the knowledge of his dignified Academy preceptors, he took the first job he could get — clerk in a store at twenty dollars a month. What with map-making, surveying, clerking, keeping books, he had five thousand dollars saved when he was twenty-one. He built a plank road by contract and next jumped into country banking from which he sold out and came to New York, where he took the fearful risk of buying up the bonds of a lame little Saratoga rail at ten cents on the dollar, and after putting it on its feet, found himself in Wall Street.

If you are inclined to be a fatalist, believing individual endeavor to be a part of a greater design, ten times more will you be a fatalist if you go back over the dates of Jay Gould's life. He was born in May, 1836, less than one year of the time that first spadeful of earth was lifted at Deposit for the Erie, in November of 1835. As you know, the true astrologic

year begins in spring; so Gould was born with the kind stars in the ascendant, and the Erie was born with very sinister stars indeed in the ascendant and all the kindly influences of a genial sun on the decline. He had jumped into surveying and map-making for rails and plank roads, the very year the Erie had celebrated its triumphal entry to the port on the Lakes. The resounding huzzas of that 1851 May procession must have reached young Gould's burning and ambitious ears; for he was surveying right along the state boundaries between New York and Pennsylvania. He must have seen at a vast distance the celebrities of the famous excursion; for many of his maps and plank road contracts were made for and at Albany; and Jay Gould was never at any time a fool. Ears and eyes were open, but lips shut. He must have known from his upstate experiences that, while the revenues and freights of the loudly lauded Erie were now mounting every year, the mortgages on the line were piled sky high — firsts, seconds, thirds; but there is no proof that he knew the one essential thing about those mortgages at this time. If he had, he would have twisted the necks of his subsequent associates — Drew, the money-lender, and Fisk and his gang of bribing bosses, who owned judges and legislators and voters in droves. He would have twisted their necks and refused to be drawn into their dark cesspool of ruin. The one essential thing in those mortgages — the secret, ruinous, criminal thing was they had been issued so that at any time at the sole discretion of the treasurer, without a director being

liable or aware of the action, they could by the simple trick of tearing up the mortgage by the man who held it, be converted into stock; and the stock could be flung on the market, driving its price down to zero; and when a rail's stock falls to zero, its bonds begin to follow the downward curve of the stock; and the money-lender can buy up that stock driven from par of 100 to 7, 8, 10, hold it off the market till it rises again, sell again, again buy bonds and repeat the trick, adding to his gains while he ruins his road. This explains why Drew, the cattle drover, had "gone into Erie," and snaked and sneaked and coiled and inched his way into the commanding position of treasurer.

And now Jay Gould had jumped into New York rails in Wall Street, when the Street was ringing with the ominous question of how a road with mounting revenues could have deficits mounting faster than its revenues. He might have answered sententiously as a later-day oil man of California answered — that a little more such prosperity would bankrupt them. The freights were coming faster to the Erie than they could raise money to handle them; so the Erie borrowed and borrowed and borrowed — borrowed when real money was so scarce after the Crimean War, it had to pay seven per cent on one hundred dollar bonds for whose sale the railroad could raise only seventy-five dollars. It had to do that or see its engines collapse from too heavy loads, or its bridges crash from too long trains on rotting iron rails, or frightful accidents that meant rebuilding and suits for damages.

Remember, its roadbed was the most expensive at that time in the rail world. Its grades were terrific — the highest known at the time. Its curves were sharp. It could not refuse freight without losing its charter. It could not accept it without outlay to handle it; and it could not make that outlay without paying a rate of interest that was a millstone round the neck of any struggling venture; and in that era, Jay Gould, age twenty-five, jumped in the rail world of Wall Street.

Let us see what had happened after " the tumult and the shouting had died " on the triumphal excursion to the Lakes.

The stage and the characters are all set for the Tragedy of the Erie.

Chapter XIX

Enter Jay Gould And Cornelius Vanderbilt. 1858–1873

WHEN Gould came into the big rail world, utterly unknown, he was between his twenty-fourth and twenty-sixth years. When Vanderbilt came as a power in the same arena, he was well on in his sixties and one of the richest men in America. Legend has it that his sudden conversion to rails at an age when other men usually seek repose resulted from a chance ride on a railroad, when in spite of a minor accident entailing delay, steam on steel went racing past his river steamer at a pace that opened his eyes to the future of rails. It is also true that he became involved in rails because in the slump of prosperity after the Crimean War, many crippled, poorly built rails with interest on debts they could not pay came to him as a rich man with ready cash to endorse their otherwise quite worthless promissory notes. Also his son William — to Vanderbilt's amazement — had made a dinky little suburban road on Staten Island pay. This was the son to whom legend has ascribed the classic phrase, " the public be damned " ; and, it may be added, there is no authority for that legend. The old Commodore might explode in anger almost to apoplexy. The son was of another stripe — sharp as his father but reticent as a clam.

Vanderbilt had endorsed bad paper on the Erie's chattel mortgage stock for more than four hundred thousand dollars; but Drew had endorsed up to nine

hundred and eighty thousand and held in addition bonds between three and four millions, which he could at any time either change into stock or foreclose as a mortgage is foreclosed on a farm — and toss the whole road into bankruptcy.

Two questions should occur here.

When the Erie had reached the Lakes in such a blaze of triumph, how came it that its bonds had swollen to thirty-four millions with stock of only ten millions? That was as dangerous a proposition as to mortgage a thousand-dollar house for thirty-four hundred. The thing seemed inexplicable. Here was the Erie, with huge immigration traffic west and huge coal traffic east, going back financially every year. How came it the Erie was at one and the same time making money and losing it? Solely from those early blunders. The gauge had been made six feet. It had to be changed to the standard gauge. Though that was at first done by laying a third rail, it meant changes in one hundred and thirty-two engines and sixteen hundred cars. Iron rails, too, were being replaced by steel. The charter did not permit crossing New Jersey; so expensive docks had to be bought to connect with New York. Telegraph and machine shops and rail stations and water tanks added to the outlay on a railroad that had really begun on capital far below its costs. Side roads had to be built to feed the main line; and when these crossed a New Jersey or Pennsylvania boundary, they had to be under separate charter. The fact that Daniel Drew, the treasurer of the Erie, held some of these properties and sold them

to his own line under cover did not make them a particularly cheap investment; and the sly old scamp took mighty good care that properties so bought for the Erie had bonds that could be converted into Erie stock. At this very time, too, the Erie suffered heavily from floods, from strikes, from hard winters that hampered traffic.

The second question is — how did an ignorant old man like Drew, a cattle drover, a drivelling, tobacco-chewing, evil-faced country skinflint — ever get such bulldog grip, such sinister, unbreakable power on a road financed and sponsored by the best minds of his generation? How do rats in a great ship gnaw holes that may engulf it? The question is already answered. Drew held the mortgages. At times he held three and a half millions of bonds, at times almost six millions; and certainly at one time when Erie shares were down to 17, he held, in addition to these mortgages, bonds as double security, twenty-eight thousand shares in one block and fifty-eight thousand shares in another. If the directors did not keep him as treasurer, he could ruin the road. If they kept him, though they could not prove it, " the Street " was aware something sinister was the matter with the jumpy Erie shares. How many shares of Erie were out on the market anyway? Nobody knew. All the public knew was when Erie went from 80 to 43, and from 43 down to 17 and 8, and everyone was flinging it wildly to the dogs, an unseen hand was buying up the cheap shares, and woe betide the speculator who couldn't deliver what he had sold at the low price. The price would run up

mysteriously to 80 again, and the speculator had to deliver or go to ruin. He often did both. Drew, of course, was the explanation. By changing bonds to stock, he could flood the market beyond its buying power. When the price went down, he was the buyer. When the price swung up from scarcity of stock, Erie soared; and the speculative public followed as stampeding sheep follow a bellwether over a precipice; and Drew was at the bottom of the precipice to shear them well. He sheared friends and foes alike. He would "tip off" church friends that Erie was "a good buy"; and when each friend "tipped off" circle after circle of other friends, Daniel Drew was on hand to let them have all the shares they wanted.

Drew and Vanderbilt did not love each other. Both had begun as what we would call "roughnecks"; but while Drew's faults became more glaring and shameless with age, Vanderbilt was no longer a crude ferryman. He had gone to Europe in the fifties on a yacht that was the wonder of the world. "Upstart," they had called him at first and refused to receive him in high circles; but when he left Europe, half the royal courts of the Old World had groveled at his feet and all society was feeding out of his hand. He had learned more on that trip than he perhaps acknowledged. He had learned diplomacy. No longer did he send back such a terrific ultimatum as he had once delivered to a rival steamship line: "You have undertaken to cheat me. I will not sue you because the law takes too long. I will ruin you." And he did. He had learned that you can't fight a skunk

LET THEM HAVE IT ALL, AND BE DONE WITH IT!

The period dominated by Vanderbilt, Jay Gould, Russell Sage and their fellow speculators was notorious for stock speculating and financial gambling.

Jay Gould, along with other members of the notorious Tweed Ring, was frequently a victim of the famous cartoonist, Nast.

in the open and not come out damaged. He must also have realized that American carriers, which were independent, could not stand up against European water carriers heavily subsidized by their governments.

Vanderbilt and Drew had been rivals in the Hudson River steamship business. They had slashed rates; and again legend has it — Drew had come out best and taken a good slice out of Vanderbilt's millions; and now Vanderbilt came into rails. He had added vastly to his fortune from steamships in the wild stampede to California; but he was quick to see that a gold camp is only transient as an earner. It either attracts rival roads, or if short-lived, peters out; but a railroad through densely settled territory is an earner for all time. He had begun to buy Harlem when its stock had sunk to $9 and bought it all the way up to $100, to which it ascended in less than four years under his careful management of scrapping poor engines, which the crew called " tea pots," " tin kettles," selling the old slat-seated cars to new lines in the West, and putting on cars that could carry as many as eighty passengers, and inducing the City Council of New York to extend his right of way through the heart of the city, which in the sixties was still very largely suburbs and truck farms. Undoubtedly he used Boss Tweed as his tramway tool with the City Council; but before these tricky rascals could rescind the permission in order to pound his Harlem stock down, he took good care to have his workmen on the streets day and night getting the tracks down; so

when the motion came up before the finance committees, there lay the rails; and when Drew allied himself with the Tammany gang and tried to force Harlem down by selling what one historian calls "imaginary shares," Vanderbilt's orders were to buy every share offered at any price. Before the Tammany gang realized, Harlem shares were at 179, and Vanderbilt demanded delivery of the "imaginary shares." No one knows what he took out of Drew's tight pockets by this bold stroke, but certainly enough to make up all Drew had cost him in the old steamship days.

Many legends cluster round this first clash of the two masters of finance in Wall Street, one the ruthless, despotic builder; the other the rat gnawing ruin for others in the dark; but all agree Vanderbilt was unmoved by the whining tears for mercy and bade the Drew gang "pay up and shut up." Then it dawned on the Street, that Vanderbilt was in rails, not to smash them and speculate, but to build them up in great permanent systems.

Parallel to the Hudson and the Harlem, another road — the New York and Hudson — had crept in decrepit joints to Albany and was now, like other roads after the Crimean War, crippled by finance. Vanderbilt began buying it at 25. What could he do with it? men asked. Vanderbilt's next step was to go to Albany and obtain authority in the charters to consolidate his rail holdings for a vast system to carry immigrants, now arriving in America by the thousands, to the roads west of the Lakes. Bribery as a

fine art had not yet been perfected in Albany, but with Boss Tweed's help he got the authority; and his Hudson stock went to 150. Again poor old Drew tried to pound Hudson down, and again Vanderbilt bought every share offered right down to 90. Again many legends cling to this episode — Vanderbilt standing at his office windows signaling and shouting for his brokers and swift messengers — there were no telephones in those days — " to buy every blank, blank, blank share offered " right up to 285. Again Drew wept and cringed and pleaded and dogged the Commodore to his residence in Washington Square. " Pay up or shut up " was Vanderbilt's pitiless reply. Drew lost another million to Vanderbilt.

It may be guessed these two loved each other less.

If vengeance could move a heart whose only god was gain, the poisonous fury of a rattlesnake ready to strike must have mingled with Uncle Daniel Drew's chewing tobacco the night after that interview. He had the Erie tied up so he could loot it whether stocks went up or down; but this — Vanderbilt! What would he not dare? Let him dare. Drew would trip him there. I refrain from all the details of this fight to connect his Harlem line and his Hudson River line with that Albany to Buffalo line. The records fill volumes. Freight had to be broken and transferred in another of the famous " isthmus wars " at Albany. Passengers had to trudge across the bridged river to the Albany station. For three years, the battle waged hot — the Commodore knowing well that public conven-

ience was on his side to force the politicians to change his charters. His stock winnings of at least four millions gave him leeway to improve all his roads. He was not raising rates. He was lowering them, so fast he ruined rivals. When his consolidation went through in 1869, the stock of his combined roads was selling at the straight market value of two hundred dollars for a one hundred dollar share. Vanderbilt was at that time seventy-five years old.

He did, then, that for which he has been blamed and condemned ever since. He looked at the market value of two hundred dollars. He looked at the par value of one hundred dollars. The roads had cost forty-four millions cash. They were valued at twice that on the Street, and they were worth it. He had double-tracked the Hudson River line. He was four-tracking the road from Albany to Buffalo, two for passenger, two for freight. He had ripped up old iron rails and replaced with steel. He had replaced wooden bridges with steel. He had the Grand Central Terminal — the most valuable terminal in the world. By the stroke of his pen and the fiat of his own will, he now increased his rails' capital to eighty-six millions. Was the forty-two millions added to the capital " absolute water," as Charles Francis Adams, one of the best authorities on rails, charged? Or had the stockholders who had built up the roads the right to increase their value to the Street value and pay themselves back the profits they had yearly put into the line instead of into their own pockets? I answer frankly — I do not know. They could have made as

much and profited just as much by selling their one hundred dollar shares at two hundred; but that would have dispersed the New York Central stocks among a horde of speculators to become the football of such swindlers as Drew; and that Vanderbilt would never permit as long as he was a power in the rail world.

Wooden rails had been replaced by iron rails. Iron rails had been replaced by steel. Roadbeds and bridges had been made as safe as the engineering skill of the day knew how to make them. Cars had been built comfortable as home parlors. Transfers from point to point had been linked up in one continuous system. "Isthmus wars" had been terminated for all time. Telegraph had been installed. Stations had become more comfortable waiting places for the immigrants passing west than they or their ancestors had known in all their lives. Freight sheds of frame had been changed to brick and stone to avert fire. Lateral feeders ran out from all central points to bring traffic down to the main line.

Did that justify Vanderbilt in almost doubling the capital stock of his lines? I answer frankly — I do not know. I know a grocery man does it rather than reduce prices to his customers. I know a man who has a hundred-dollar horse does it, if some other man values the horse at two hundred dollars, though it is the very same horse. I know farmers have done it with a cow that cost fifty dollars, selling in public auction for one hundred and fifty.

Those who wish to follow out this time-worn con-

troversy can balance arguments and facts for themselves. One of the authorities who goes deepest into this and cannot be accused of bias is the late William Washington. He asks bluntly, when the rail has added value to the property of all residents along its line, why shouldn't it add to its own property value? Aye — retort the other side — but the public has to pay higher rates to keep up dividends on the higher capital. *But that is exactly what the public did not do.* Vanderbilt had slashed rates down from the time he took hold of the New York Central group. He had slashed them down where he almost wrecked the rival Erie. He had given better service at lower costs and he had risked his entire personal fortune in the process of upbuilding. That rails are not " overwatered " to-day we know from the fact that the official valuation made by the Interstate Commerce Commission is pretty nearly twice what the Radicals of 1913–14 thought it would be — certainly twenty-five per cent higher than the rails would have claimed for themselves at that time. What rail wants to overvalue itself and get taxed for that value? Jefferson paid fifteen millions for Louisiana. Would anyone contend that Louisiana is only worth to-day the capital Jefferson put into it? The question makes one laugh. But, says the other side, much rail stock had been given shareholders for which they had not paid a dollar. True, says Washington; but the farm homestead fee costs ten dollars. Has the farmer no right to the values he puts in year after year, the house for " the sod shack," the barns for his cattle, the fences, the im-

provements year after year plowed in while he foregoes using each year's profits for himself? Before 1900, three billions had been lost in bankrupt rails. Have investors who take such risks no rights to profits from the risks?

Another curious fact Washington brings out is this: *if dividends on "watered stock" increase rates, then the rails on which no dividends have been paid or ever can be paid should have the lowest rates in the country. The very opposite is the case. The nonprofit rails are allowed by the Interstate Commerce Commission the highest rates in the land.* It is that or let them smash and quit to the ruin of the shippers along the lines. Washington takes every rail group in the land, Northeast, Southeast, Middle West, Northwest, Southwest, and giving the actual costs and actual earnings, proves this. The whole dispute is so much deeper than a snap judgment can decide, that it really harks back to the question, Are profits permissible at all? In other words, are we to base our regulations on socialism or private ownership? There is no use "ducking heads" from that brutal final question. It is the question; and I am not wise enough to answer it. We have to work it out, not smash it out. Two things we can set down as a dead certainty. The American voter is not going to be stampeded rashly to any extremes from one social system or another. Neither is he — and on this you can wager your last dime — going to see the American farmer reduced to the status of European peasantry by overcharges or overtaxes eating up all his profits. The American

nation will strike a fair balance as it has done from the beginning of its history.

All we can answer in either justification or condemnation of Vanderbilt's action, is this — if all the roads that followed his example in " watering stock " had put into their systems as great improvements as Vanderbilt, and put in of " water " only the selling value of the stock on the open market, " watered stock " would not have become the frightfully malodorous thing that stinks in the nostrils of decent men. It would not have " rooked " thousands and tens of thousands of innocent investors, who bought the swindles, while the gamblers retreated with the cash of a worthless thing sold — retreated with the unction of a Drew and tongues slyly tucked in porcine jowls.

And that is as far as any purely historical record can go without becoming involved in a furious, futile controversy that wages between two schools to this day; and don't mistake it — both sides are absolutely sincere in their views. Their views do not arise from the jaundiced envy of the slug, who will do nothing himself but considers he has a right to a living, without effort or self-sacrifice, from the man who has accumulated through thrift and foresight and daring. One side sincerely contends that such a burden of doubled stock imposed on the public for all time higher rates than were necessary for fair profit. The other side as sincerely contends that we have no more right to limit the profits through increased values to rail stock than we have to limit the

profits through increased profits to grocery stock, or cattle, or horses, or sheep; and not being a Solomon, as each side contends it is, I suppose, like England and the United States on other experiments in democracy, we shall muddle through and learn by experience. At present, by the law of 1920, rail profits from traffic revenues are limited to five and three-quarters per cent. We shall not have to wait long to decide. Twenty-five years will tell the story; for in no period in all history have we witnessed such colossal mergers in all kinds of stocks from breads and coppers and banks and radios to silks and chain groceries and mail order houses, which began with a peddler's capital of ten cents and are now in an era of capital not at Vanderbilt's eighty-six millions, but at billions. Let us try to keep our heads and hold the vitriol from our pen points till we learn. It is going to be one of the great lessons of the next quarter century.

But now Vanderbilt did exactly what Eleazer Lord did back in the thirties. He looked at the rail map. His system covered one straight leg of a triangle south to north, then at right angles, another leg of the triangle east to west. Obviously, though Vanderbilt knew nothing about geometry, a problem over which most of us tripped in our schooldays would have told anyone the base of that triangle would complete his system cheaper, quicker, straighter, without this slashing of rates between Erie and New York Central from nine dollars to five, and in some cases with secret discounts for big shippers to four. There was no sense in that. What is more — there was sense-

less loss; and Vanderbilt hated loss and he hated senseless, stupid blunders. His first step was always to make a rail pay on its merits; and this slashing of rates below cost of service, this paying of big shippers secret discounts (rebates), this system of employing "runners," or agents, to go out and get freight from rivals at any cost — wasn't sense. It was crazy folly, that killed the little shipper, who didn't get discounts; and Vanderbilt knew the prosperity of his lines depended on the prosperity of the shippers along the lines. Ruin them and the traffic would decrease.

So Vanderbilt cast his wise old eyes on the Erie; and the tragedy crashed from the blue in a storm that rocked and wrecked the rail world for more than twenty years. He was a holder of some of its bad papers and he rightly guessed whence the floods of worthless stock were emanating — from Drew. His first measure was to dam those floods; and I doubt not he did it in pretty vigorous language. Erie's bonds were down to thirty-five dollars and when Drew advanced more loans on more bonds, he handed over only sixty dollars for hundred-dollar bonds and took the difference in stock, more stock. All this did not happen in one year. It ran on from 1857 to 1869. The Erie, which was to cost only ten millions, had now cost in actual outlay thirty-seven millions.

When the bonds were at 35, the stock was at 8; and Drew continued to suck it down alive. He was eating it up at that price; for Erie had to borrow from the old curmudgeon. It couldn't pay its wages.

It couldn't pay its taxes. It couldn't pay interest on its debts. It did not seem that any power on earth could pry it loose from Drew's coils. Directors tried to pry it loose by forcing it into a receivership. Who bought it? A representative of the bondholders — for two hundred and twenty thousand dollars in 1861 — which meant Drew; but Vanderbilt and Vanderbilt's friends were on the new board of directors; and one would give a good deal for a snapshot of those two old enemies with masked faces looking at each other across the big table — Vanderbilt now showing the signs of age with side-burn whiskers and high forehead topped by a fluff of whitening hair but as brainy, as dominant and determined as in his ferry days; Drew stooped, leaning on a cane, suave, self-righteous to the point of being bullet-proof, sniveling, but shifty of eye as ever. There was only one way to guess what Drew would do. He would pretty nearly always do the very opposite of what he was pretending to do. Whereas with Vanderbilt, he would do what he set out to do, or smash what tried to stop him, or smash himself trying to smash obstructions. One was a fighter in the open, the other was an assassin who struck in the dark; and it seems ridiculous to add, the banks of New York shrank in sheer terror before the power of these two battling men. Drew realized he needed younger men; so he was using Fisk, the showman, and Gould, the silent young free lance, just as Vanderbilt had not scrupled to use Tweed. Both Gould and Fisk were new names to the Street as late as 1867; but because Tweed and Fisk played the same

game with Tammany Hall to elect judges pliant to their chiefs' will, the Street had an erroneous idea that Vanderbilt and Drew were playing a game in collusion to shear the public in frenzied speculation. The Street guessed wrong. It was rather that each like a wrestler was playing the foolish Street to catch the other unawares and crush him.

It seems outrageous, incomprehensible, unbelievable, that a great rail system, on which two or three million shippers were dependent, in which thousands of innocent people had invested their hard-earned savings, could become the prey in a disgraceful prize ring of rascality. It seems to point to the inference that all rails should be taken out of private ownership and placed under national management. But wait a bit! The darkest shadow overhanging Erie's fate was that the railroad had got into politics and politics had got into the railroad. Public rights were ignored as the bleating of fool sheep. Votes were bought in mobs. Legislators offered themselves on the auction block to the highest bidder. Judges obeyed orders from the rail fighters as from the nod of a god's head and in reward got fees running from fifty thousand dollars for a decision to one hundred and fifty thousand for a referee's action; and sheriffs were beaten up by Bowery toughs and thugs who were never so much as arrested. That the judges were later impeached and the legislators relegated to the disgrace of defeat and infamy — did not restore the losses to the ruined.

Ugly pages in the history of democracy and it

doesn't commend rails in politics, or politics in rails. It harks back to the earliest experiences of New York and Massachusetts that the farther those two are separated, the better for each.

Records before the courts and state investigations cover literally thousands of pages. One need relate only one or two of the high spots to grasp the iniquities now working under cover to use the Erie as the speculative football of thugs, gamblers, bribe givers and bribe takers.

Vanderbilt's first move was to go openly to the courts to stop Drew from issuing stocks for bonds as fast as the printing presses could grind out shares. He asked an injunction stopping the directors from paying interest or principal on the bonds held by Drew till he would restore the bonds and shares held as additional security. Judge Barnard, who came under black enough cloud himself, granted the petition. Vanderbilt then demanded the withdrawal of Drew as treasurer. Here, Judge Barnard delayed his decision. Did he delay for a bribe? The question cannot be answered. He was later impeached and stock profits or fees totaling fifty thousand dollars were finally traced to his doorstep. Vanderbilt went on fearlessly buying Erie stock; and Drew gave him all he wanted at mounting and soaring prices. But while Vanderbilt was appealing to a New York City court, Drew hopped across the Brooklyn ferry and asked another injunction from another judge to restrain Judge Barnard and Vanderbilt from using the courts to speculate in Erie stocks. The Brooklyn judge granted

the petition. The Erie directors were permitted by the court of Brooklyn to go on turning bonds into stocks.

Here were two courts in one state giving absolutely contradictory decisions.

In twenty-four hours, Drew and his crowd issued ten millions more of stock and hurled them on the market in defiant triumph. The stock fell fifteen points in one thud.

Was Vanderbilt stopped from buying Erie? He was not. He flung his whole fortune into the fight, and the press kept quiet, and the banks trembled. Later, the Brooklyn judge cleared himself by acknowledging frankly he had given his decision to Drew on insufficient evidence and was unaware it was to be used for stock-jobbing purposes. In the interval — and it was only twenty-four hours — " at ten on the morning of the 11th, a panic stricken Drew, Gould and Fisk bearing in their hands account books, desk drawers, packages of paper, bonds, assets, archives, bales of greenbacks in hackney coaches . . . fled to Jersey City . . . followed by others like themselves in the night to place the Hudson between themselves and " Judge Barnard. If Drew's judge was going back on him, Drew was going to be safe across the river in Jersey; and the printing press went on grinding out more shares for Vanderbilt to buy.

It would be comic opera if it were not a hideous travesty of all that democracy represents.

Vanderbilt demanded that a receiver be appointed for all the Erie.

The receiver named was Vanderbilt's son-in-law. A judge from yet another court on petition of Drew's lawyers forbade Mr. Vanderbilt's son-in-law from becoming a receiver; but in any case, what was he to receive? All the Erie papers were over in New Jersey beyond reach of New York court officers and both sides were now ignoring injunctions and Daniel's printing presses were busy as ever grinding out Erie stock.

A Tammany party heeler was appointed to referee what decisions were to stand; and while he never refereed anything, he was paid for his services — and, of course, that came out of the poor Erie's treasury; for the treasurer was Mr. Drew.

The thing was now becoming such a public scandal that the judges found themselves in the witness box. Barnard did acknowledge he had talked things over with friends of both sides in taverns and clubs. It was proved there were plans to have thugs from New York kidnap Drew in Jersey City; but these plans had miscarried.

Adams in his review of the case says frankly, a secret meeting was now arranged between Drew and Vanderbilt on a Sunday, when Drew knew the process men were off duty and he could venture to New York. Drew agreed to take back his Erie stock from Vanderbilt, but Vanderbilt was insistent Drew should go out of Erie. Drew was allowed to come back to New York unmolested and his overissue of stock no longer questioned. Peter Sweeney, a Tammany man, was named receiver and was paid one hundred and fifty

thousand dollars for his services. The lawyers pocketed their fees. The judges pocketed their bribes, and the might of the law was the laughing stock of the Street. So dropped the curtain on the fevered year of 1866–67.

But where were Fisk and Gould in this wild scrimmage of iniquity? Acting for Drew from beginning to end as brokers in the rail market. Gould went up in 1868 to Albany " to induce " the legislature to legalize the stock issues of Drew. The legislators required a lot of " inducing." There, Gould met Boss Tweed of Vanderbilt's Tammany Ring. Tweed had unaccountably one hundred and eighty thousand dollars of the stock delivered by Drew to Vanderbilt. Naturally, he wanted that made legally valid. Under oath Tweed later swore " the inducing " process emptied " a little black satchel " of a half million which Mr. Gould had brought with him to the Black Horse Cavalry to vote as paid. One senator's vote wouldn't stay put. At the last moment, when it looked like a tie, he raised his price to twenty thousand dollars. The law was passed legalizing the stock issue but forbidding any consolidation of the New York Central system with the Erie. This killed Vanderbilt's plan to consolidate the two systems.

One wonders what would have been the fate of the Erie if Vanderbilt had won.

Gould had been brought down from Albany under arrest on that prior charge of overissuing Erie stock; but when the sheriff went to seize the body of said Jay Gould, Tammany thugs interfered with the pro-

cess of the law. While the lawyers kept up a show of argument to midsummer of 1868 — largely to placate an enraged public — Jay Gould emerged from the scrimmage as president of the Erie, age thirty-four. What influences put him in, it is hard to guess. Perhaps Drew, forced out, wanted his man in to hold the loaded dice for future tricks. If so, he reckoned wrong on Gould. Once clear of that " old man of the sea," Gould charted his own course. Perhaps the legislators of Albany and the Tammany Ring wanted as president a man who could not tell all he knew of " rings inside rings " because he dare not. They were all heavy holders of Erie stock and did not want to see it footballed down again by Drew. Perhaps Gould's own consummate ability in handling men, and his still more consummate ability in keeping his lips sealed, commended him to all sides as the best compromise candidate to disentangle the Erie from the awful plight into which it had fallen.

As poor old Drew mournfully wailed, " there ain't nothin' more in Airy for eny ov us — Corneel."

It was an ominous sign that Fisk, Tweed, Sweeney, were now directors. Anyway, judges would obey their nod and the Erie would be free of contradictory injunctions and ravenous politicians demanding " blackmail " for votes. Cheaper to buy the voters, who created the judges and politicians!

But the banks had become gunshy. No more loans to Erie. It had at least forty millions of common stock on the market instead of the ten millions with which it had begun. In 1868, it could not sell a bond, and the

Exchange could not exclude it for fear of a universal panic. Up and down, wiggle-waggle went Erie stock. With Fisk as auditor, wilder and wilder went the spendings — eight hundred and fifty thousand dollars for the Grand Opera House; a million and a half for nine brownstone houses in Twenty-third Street, some of which housed Erie offices, some of which housed Fisk's show ladies. Old Drew must have taken fright at the wild pace; for he now turned on Gould and besought the courts to enjoin and remove the new directors. He was ghastly short of Erie stock, which he had again been trying to pound down. He was indeed almost down to the penury in which he died, dependent on poor relatives. Gould and Fisk were through with the pitiful old harpy. He was tossed aside as a worn-out tool, a victim of his own plots. The receivership came as already told with Gould as receiver and later as president of the reorganized Erie. Again a block of genuinely furious stockholders tried to oust what they called the Tammany Gang; but the Tammany toughs camped in the halls of the Erie offices and the minions of the law did not find it healthy to pass them, though it is a commonly accepted tradition that Jay Gould made exit from his offices several times over desks and through windows and down fire escapes, till fresh decisions ensconced him securely in the saddle. Henceforth, Tweed and Fisk and Sweeney were his office boys. They had simply changed their boss from Drew to Gould.

Gould meanwhile went ahead restoring the dilapidated Erie as revenues permitted. The restoration —

and perhaps paying off the hordes of leeches who had attached themselves to the line in ten years of terrible misrule, buying up the worthless stock with which Drew had flooded the market — sent the capital stock up to more than eighty millions. It was marked " paid up "; but paid how or to whom, the reports did not state. Compared to Vanderbilt's forty-two millions of " water " in the New York Central system, this looked like poisoned slime. The prices were so very low that English investors came buying in tempted by the reputation of Gould's abilities to restore a ruined line; and this led to one of the most amazing fiascos in all Gould's spectacular career.

A wife of Fisk's partner visiting in Minneapolis met a lion from the Old Country posing as a " Lord Gordon Gordon." True, he didn't say he was, or sign himself as " Lord " Gordon. What titled man would? But letters came to his hotel addressed " Lord Gordon Gordon," stamped with the Aberdeen crest. The little frontier city, now in the first mad scramble of its Northern Pacific Railroad boom, pricked up its ears and all social doors were thrown wide open to the suave, deferential, charming addition to polite circles. He was simply an accomplished swindler from Europe — living by his wits which were sharper than his courage and no remote relative to the Aberdeen Gordons; but the son of a poor man, with a past few knew except that he had had the knack of picking up such a veneer of polished manners as any sharp valet or hotel waiter could acquire. He did not say so, but he let drop mysterious, casual hints of being a

scout to look over cheap Western lands for fifty thousand or more British colonists. Cheap lands! The Northern Pacific had oodles of cheap lands — land grants. Forthwith, he was supplied with a private train to look over cheap lands. That entertainment cost the Northern Pacific fifteen thousand dollars. He selected his land and in his quiet way proceeded to a bigger field for operations — New York — where mysteriously enough he took quarters in a hotel owned by Tweed's son; and mysteriously, the whisper leaked out he was in New York with power of attorney to negotiate sixty thousand or more of Erie stock owned by English banks for the best value they could get; and again forthwith he became a lion in New York. Horace Greeley was taken in by the impostor. So was the president of the Pennsylvania Railroad. So were Vanderbilt and his family; but it was to the Erie crowd he drifted, though he at first questioned " whether it were wise to meet the Erie people when he was negotiating terms for English stockholders in the Erie." He was a wise boy — was " Lord " Gordon Gordon; and a keen student of human psychology long before character analysis had come in vogue. One can see Jay Gould pretty nearly jump out of his boots! *Sixty thousand more shares of Erie* tossed on the market would have smashed Erie values to the dust. Gould met him almost as a suppliant. Gordon treated Gould with scant and royal condescension. He would " refrain " from tossing these shares on the market provided Gould would resign the presidency of the Erie. The certificates were on the way from

London, and, on second thought, Gordon consented to refrain from ruining the Erie by such a move if he were compensated a million in good securities, half down to pay his expenses and negotiate delays with the English crowd. Now Gould was at this time having real enough trouble with genuine English shareholders, who had a beastly stolid British way of wanting facts, not explanations. The American Ambassador to England was plaguing his very soul. Like lightning Gould handed over to " Lord " Gordon two hundred thousand dollars in greenbacks and three hundred thousand dollars in other securities of the Erie's holdings.

What pricked Jay Gould's suspicions, he never told. He may have seen the British consul; but within twenty-four hours, early in the day, he stepped into Boss Tweed's offices on Duane Street with the astounding announcement: " Tweed, that Gordon is a scoundrel — I want him arrested."

Within half an hour, the Tammany chief of police, Gould, a judge, and a sheriff were in Gordon's hotel. Admitted to his parlor, they told him he must restore the securities instantly or he would be railroaded to prison till he disgorged. Gordon handed back the cash and gave an order on his broker to restore the securities; but Gould hadn't finished with him. He swore out an order for his arrest, and Gordon countered by entering suit against Gould for intimidation and breach of contract, but he was shy of court proceedings, was " Lord " Gordon Gordon. Leaving his friends thirty-seven thousand dollars in the lurch for bonds

for his appearance in court, he disappeared; and a year later turned up in the settlement of Headingly, just west of Winnipeg, Manitoba. His bondsmen were furious and dispatched two American detectives using fake Canadian badges and warrants to kidnap Gordon and slip him back across the border. At this time, just after the Riel Rebellion of 1871, Manitoba was not feeling particularly kindly to Minnesota for harboring Fenians and rebels. The detectives knocked on the door of Gordon's little farmhouse. He begged not to be taken back East through the United States and, on promise that he would not, asked leave to retire to his room and pack. A revolver shot sounded, and " Lord " Gordon was found with his brains blown out. If he had had as much daring as cunning, he might still have been a most dangerous foe to Gould; but he probably knew the reputation of those Tammany thugs towards a man in jail. Of course, such a violation of international law as fake detectives or kidnaping a man across a friendly neighbor's border provided leather-lungs with a theme for some months; but though Manitoba had no love for Fenian raids, she had less for fake English adventurers. Being an old Hudson's Bay Company town, Winnipeg had suffered too much from such gentry herself. After lying in jail a few weeks to teach them to observe the law, the detectives were quietly tried and sentenced to twenty-four hours' imprisonment. Discounting all the leather-lung rantings, it was pretty much regarded as a good joke on Jay Gould. It happened long before my day in the West; but was one of the

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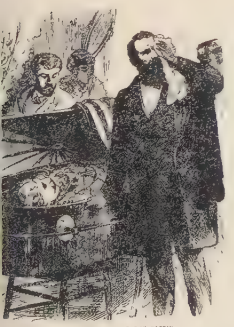

JAY GOULD MEETING BEHIND THE COTTON

THE INTRODUCTION.

JAY GOULD

PLEASE POST THIS UP IN A CONSPICUOUS PLACE.

AGENTS WANTED.

es Fisk was one of the most picturesque figures in the history of American railroading. A nancial "buccaneering" he was assassinated after a spectacular career by a former business a in 1872.

after-dinner jokes for a generation. Good old Hudson's Bay men, who knew fox pelt from common coyote, couldn't understand how Jay had been fooled by a common coyote.

Another similar story of a later date could be told, of another suave imposter on Mr. Gould, who trimmed Winnipeg of fourteen thousand dollars, where "Lord" Gordon almost trimmed Gould of half a million. That came in my own day and I recall the land operator telling me he "spotted" the crowd for their real value when the liveryman presented them with a bill for sixty dollars, and not one of "the oily pups had a dime"; but as the actors are all alive and all but the impostors innocent, the story may be forgotten. It was just typical of that curious weak streak or blind eye in Gould's otherwise almost uncanny reading of human character.

The early years of Gould's presidency of the Erie continued hectic. Fisk fell by an assassin's bullet in January of 1872, killed by a young man jealous over one of the showman's ladies. The Tweed Ring was driven from public life by the fury of an outraged public. The fearful crash of 1873 was hanging over the financial world like a sword suspended by a thread. In thirty years, the Erie passed through four receiverships; but all dated back to that era of lords of misrule, dictated by an ignorant old man, who died a pauper in the midst of senile dreams that he would go back to the Street and "lick the gang." There was never a scintilla of evidence at any time that Daniel Drew realized he had ever done wrong.

Here, the tragedy of the Erie must drop its curtain. That it survived at all was only another proof that progress goes ahead in spite of its tools. He who obstructs its way is crushed. Was Jay Gould crushed? No, but he died a burned-out candle at fifty-six; and I think anyone could easily win the wager that of his reputed fortune of from seventy millions to fifty millions, less remains to-day with his heirs than the original capital of the Erie.

He will come again in the story of Western rails. Was he the victim or the creator of his era? I answer again — I don't know. In his leisure, which was little, he retreated to his flowers, to his books, to his family. It was his appalling misfortune to fall into the coils of a Daniel Drew and gain his admission to the great financial center by the subterranean channels of the most corrupt city government New York ever knew. If he had had Vanderbilt's physique, he might have fought it and lived long enough to triumph over it, but he hadn't. He was frail of body and came to a prematurely foreshortened end by taking on his back greater loads than he could carry.

AUTHOR'S NOTE

In the story of the famous impostor Gordon, I have followed Mott's *Story of the Erie* and Dr. Folwell's *History of Minnesota Appendix Vol. III.* There were so many by-plays in the story, it had to be condensed here. For instance, President Folwell, drawing from contemporary or near contemporary accounts in the Manitoba *Free Press,* the Toronto *Mail* and St. Paul *Pioneer Press,* narrates how the first kidnaping of Gordon almost succeeded when Gordon escaped near the boundary from his kidnapers and went back to Headingly farms. The episode occurred long before my day in the West but most of the actors were living and prominent in Winnipeg when I was there. Bain, the lawyer, had become one of the foremost judges in the province.

Clark, mentioned as an attorney, became one of the writers on the *Free Press* when I was on the staff. Jack Benson, the liveryman, and "Doc" Benson, his brother, lived round the corner from us. The American consul — Taylor — was one of the most beloved men in Winnipeg. The thing was regarded for years as one of the frontier jokes of Winnipeg. American writers took the imprisonment of the kidnapers much more seriously than Canadians ever did. The troops sent West to quell the Riel Rebellion had been followed by too numerous an influx of English and Scotch adventurers of a worthless type for the hard-headed pioneers to accept them at face value. They consisted for the most part of useless "younger son remittance men," banished to mend morals and hide disgrace, or of obvious impostors — valets and adventurers — with a thin veneer imitation of former masters come West to teach "damned colonials" their place in the scheme of things; and "the colonials" reciprocated in kind. Looking back, I can see we were much too hard on them. Men soft of muscle, short of wind, flabby of backbone, didn't commend themselves by self-superiority to pioneers, whose boys shouldered all earthly belongings in a blanket and tent on their back, and with axe or pick hied them by shank's mare out to work on rail grading or in the woods at a dollar and a half a day and put themselves through college to become premiers, doctors, preachers. Anyway, when sheriffs with genuine Canadian badges got out to Gordon's lodgings to take him back to New York, he exhibited great terror of passing through American territory and, asking leave to go back to his bedroom, stationed himself against the wall and blew his brains out. On that point, there is no controversy. The explanation of why Canada left "the fake" kidnapers almost forty days in the old jail off Kennedy Street was purely political. Winnipeg was sore over threatened Fenian Raids from Minnesota, before and after the Riel Rebellion. She let the kidnapers cool their ardor in the jail, where they were treated more as guests than prisoners; and the final sentence of a day's imprisonment was Winnipeg's real valuation of the offense; but in the turmoil of a Minnesota election, the farce was whipped up to "a lovely ballyhoo" of international violations.

Quite different was the eruption of another group of French adventurers in Winnipeg in my own day, who imposed on Gould. Many of the actors in the first episode were also actors in the second. This group had genuine enough French titles and cut a swath one dull winter till it was found they did most of their ranching through the neck of a bottle and left unpaid debts from hotels to liverymen and farm bosses. In this case the joke was on Winnipeg, though I can't recall it ever got in the press. When the debts became too pressing, "the pups" — as I recall we dubbed them — hied them to Newport and when their success there became evident in headlines of great weddings to American heiresses, Winnipeg sent sheriffs with genuine warrants "to nab" the culprits after the ceremony. Alas and alack! The warrants were made out in the name of the wrong man; and the emissary from Winnipeg banks came back with nary a penny of the bad debts collected.

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